	PAGE
.	395
.	134
.	129
.	276
.	543
	137
	139
	403
	134
	127
	392
	273
	391
	266
	266
	272
	393
	390
	400
	537
	265
	126
	546
	539
	541
	397
	133
	129
	389
	131
	534
	141
	542
	396
	402
	129
	129
	271
	539
	142
	398
	543
	124
	128
	141
	133
	133
	153
	119
	269
	544

JUN 2 5 1915

$3.00 a Copy. $5.00 a Year.
Foreign, $3.25 a Year.

The Journal of Abnormal and Social Psychology

EDITED BY

HENRY T. MOORE, A.M., Ph.D.
Skidmore College, Saratoga Springs, N. Y.

ASSOCIATE EDITORS

ADOLF MEYER, M.D.
Johns Hopkins University

WILLIAM McDOUGALL, M.B., F.R.S.
Oxford University

GOVD H. ALLPORT, Ph.D.
Syracuse University

JAMES DREVER, M.A., D.Sc.
University of Edinburgh

HENRY H. GODDARD, A.M., Ph.D.
Ohio State University

J. RAMSAY HUNT, M.D., S.D.
Columbia University

PUBLISHED BY THE AMERICAN PSYCHOLOGICAL ASSOCIATION

APRIL–JUNE, 1915

EDITORIAL

ORIGINAL ARTICLES

REVIEWS

Published by the AMERICAN PSYCHOLOGICAL ASSOCIATION, PRINCETON, N. J.

Entered as second-class matter, June 28, 1906, at the Post-Office at Albany, New York.

Acceptance for mailing at special rate of postage provided for in Section 412, Act of October 3, 1917, authorized on June 5, 1918.

CHARACTER and PERSONALITY

An International Psychological Quarterly

CONTENTS OF JUNE ISSUE

Published quarterly in Durham, N. C., and London.
Price $5.00 per annum.

THE DUKE UNIVERSITY PRESS
DURHAM, N. C.

THE JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY

All original articles, editorial communications, and books for review, should be sent to Floyd H. Allport, Skidmore College, Saratoga Springs, N. Y.

Manuscripts should be carefully prepared in accordance with the suggestions of articles published in recent issues of the Journal. Illustrations should be kept to a minimum, and only such as are necessary for the adequate presentation of the material. Reprints of articles will be supplied.

Please address all subscriptions, orders and other communications to the publishers

American Psychological Association
Business Office, Lancaster
Princeton, N. J.

THE JOURNAL OF
ABNORMAL AND SOCIAL
PSYCHOLOGY

VOL. XXX APRIL–JUNE, 1935 NUMBER 1

EDITORIAL

MORTON PRINCE

[A Reprint from Volume 15 of the *Dictionary of American Biography*.]

Prince, Morton (Dec. 21, 1854–Aug. 31, 1929), physician, psychologist, was the son of Frederick Octavus and Helen Susan (Henry) Prince. His father, four times mayor of Boston, was active in state and national politics; his mother was a member of a Philadelphia family. Morton Prince was graduated from Harvard College in 1875, and from Harvard Medical School in 1879. His interest in abnormal psychology developed naturally from various sources. One of these was a sermon, in which the preacher pointed to a chandelier swinging in the breeze and remarked that our bodies are affected by our spirits in the same way. This explanation puzzled young Prince greatly, and he resolved to find out some time, if he could, the relation between body and mind. After an interneship at the Boston City Hospital (1878 to 1879), he studied abroad, especially in Vienna and Strassburg, also in Paris and Nancy, where he derived much from the work of Charcot, Janet, Liébeault, and Bernheim. Upon his return to the United States he entered upon the practice of general medicine. In 1885, he married Fanny Lithgow Payson, of Salem, Mass. To this union two children were born.

Specializing in neurology, psychotherapy, and abnormal psychology, Prince was encouraged by Dr. S. Weir Mitchell, who predicted for him a brilliant future. From 1882 to 1886, he was physician for diseases of the nervous system at the Boston Dispensary, and from 1885 to 1913, at the Boston City Hospital. He

was instructor in neurology at Harvard Medical School from 1895 to 1898; professor of neurology at Tufts College Medical School from 1902 to 1912, and professor emeritus thereafter; associate professor of abnormal and dynamic psychology at Harvard University from 1926 to 1928. He lectured at various times at the University of California, Clark University, and the universities of London, Oxford, Cambridge, and Edinburgh; and he read papers before numerous medical, neurological, psychiatric, and psychological congresses. At different times he was president of the American Neurological Association and of the American Psychopathological Association. He published six books: *The Nature of Mind and Human Automatism* (1885), *The Dissociation of a Personality* (1906), *The Unconscious* (1913), *The Psychology of the Kaiser* (1915), *The Creed of Deutschtum* (1918), and *Clinical and Experimental Studies in Personality* (1929, edited by Dr. A. A. Roback), in addition to several collaborations and over a hundred articles and monographs on various political, philosophical, medical, and psychological subjects, especially on phases of neurology and abnormal psychology. In 1906, he founded the *Journal of Abnormal Psychology,* which he edited up to the time of his death.

From a rather delicate childhood, Prince had developed into a vigorous, even robustious, personality, whose love of activity and contest was tempered by a fine sportsmanship and personal detachment. Becoming keenly interested in mental dissociation, he was able, in the early years of the century, to draw much attention to this important subject and to its significance in determining the treatment of certain types of nervous disorder at a time when the "rest cure" was much in vogue. The "Beauchamp" case in particular, which he described in *The Dissociation of a Personality,* soon became, as it remains, famous. He established a great many significant facts, particularly in the field of psychoneurotic and hypnotic phenomena; he was judicious in his inferences; he put forward useful and stimulating conceptions; he continued to investigate and to learn from other investigators (including Freud), while disclaiming finality for his own system; and he saw the importance of allied subjects, and the economy of formulating his own results in scientifically acceptable language. He developed a psychology of the abnormal which integrates neurology, general psychology, and allied subjects very effectively, with great benefit to them all, including psychiatry and mental hygiene.

He showed how the most striking functional abnormalities

could be conceived neuropsychologically, sometimes as simple habits, sometimes as conflicting patterns in the personality, and sometimes as dissociated systems, but always as resultants of varied motivation in a complex environment. Conflict and dissociation are the destructive factors in any such situation, he maintained, while opposed to them as tendencies, yet aiding them at times, are the processes of association and integration, which come out particularly in the meanings things have for us. Meanings, for Prince, are the product of experience; and when they became so untoward as to favor disruption of personality, the psychotherapist must see that these meanings become changed, by analytic reëducation, to the end of dissolving the conflicts and reintegrating the personality as a dynamic whole. Hence while his panpsychism, his answer to the early mind-body problem, failed to impress scholars, he developed abnormal psychology fundamentally.

At the same time, he influenced his fellows in other ways. In college he was prominent as an athlete, was active in introducing Rugby football; throughout his life he was an active yachtsman. He organized the Public Franchise League, which did much for his city's position in relation to the public-utility corporations; he was instrumental in securing the passage and adoption of the present Boston Charter. During the World War, on his own account he organized extensive propaganda for the Allies; his *Psychology of the Kaiser* influenced the type of propaganda put over the German lines by the British government; he lectured in various countries on the War; in 1915, he was chairman of the Serbian Distress Fund; in 1918, as a representative of the State of Massachusetts, he directed the Soldiers' and Sailors' Information Bureau in Paris; he was chairman of various Boston and Massachusetts reception committees for missions from abroad; and for his services during the War he received decorations from the Serbian, Japanese, and French governments.

WHAT THE COLLEGE STUDENT SHOULD KNOW ABOUT PRESENT-DAY MENTAL HYGIENE *†

By FREDERICK L. PATRY, M.D.
PSYCHIATRIST, STATE EDUCATION DEPARTMENT
UNIVERSITY OF THE STATE OF NEW YORK

DR. JOHN H. FINLEY in a graduation address last June predicted that women would come to be the chief, if not the sole, media of culture in America, since men have taken so largely to the practical.

It is my purpose to assist you in realizing to the full cultural objectives and to capitalize through concrete performance each of your constructive potentialities in adjusting to a continuously changing society.

If we look upon mental hygiene as a help toward living happily, efficiently, healthfully and with reasonably good social adjustment, we may profit by the experience-determined opinions of those who devote their major time to the interpretation of personality and behavioristic twists and maladjustments and their treatment.

Upon what does health, happiness, efficiency and social adaptation depend? There are those educators who believe and teach that straight thinking, logical study of the facts, acquisition of information, are the chief determinants in promoting these mental hygiene desiderata. But I venture to say that it is within the experience of each of you that certain highly intelligent, top-notchers in examination ratings, and those who write excellent papers are frequently among those who are unhappy and socially more or less ineffective. It would appear then that good mental health depends upon one's capacity to live harmoniously, both internally in relation to one's feelings, moods, desires and cravings, and externally in relation to one's fellow-beings and the daily environmental situations we must face. The mental hygiene viewpoint accepts the challenge of the facts of reality in meeting an ever-growing, ever-changing society and perpetually changing environmental situations, new knowledges and new personal and social problems. If mental hygiene is to be serviceable it cannot afford to be dogmatic but must study the facts as they are

* Received and acknowledged March 31, 1934.
† Address to Skidmore College students, Saratoga, N. Y., October 2, 1933.

operating in the daily lives of each of us. It is not in conflict with democratic principles, ideals and practices but on the other hand has rich possibilities in contributing to efficient democratic citizenship.

In order that I may be more concretely and specifically of help to you in meeting squarely facts and factors which interfere with the realization of a reasonable amount of satisfaction and success in your daily living, I shall first briefly remark upon some of the factors in each of our personality make-ups which have possibilities for creating difficulties; secondly, I shall enumerate certain problems which each of you have or will likely face in your college career; and finally, I shall attempt to assist you in outlining a number of guide-posts which may contribute to the art of living wisely and well in proportion to your capacities, interests, guiding ideals and purposes.

SOME PSYCHOBIOLOGICAL FACTS OF THE INDIVIDUAL

Since we are interested in the total personality functioning of the individual in his social and environmental setting, let us observe any one of you in your daily college life and note your objective behavior over a 24-hour period. You will immediately note that your reactions vary to different situational demands, such as recitations, pleasurable occasions, disappointment in academic ratings, social rebuffs, sickness, or demands made upon you by home or social obligations. Consciously or subconsciously you measure your fellow students by the manner in which they react to these ever-changing environmental demands and opportunities.

What are the determinants of what we think and do? If we are objective in our analysis of the facts we will see that we are largely motivated in our reactions to internal and external stimuli by our emotions. The psychologist and the psychiatrist inform us that an emotion is an unpremeditated sweeping physical reaction chiefly involving smooth muscle, glandular and endocrine part-functions of the body which are largely subserved by the vegetative nervous system and usually accompanied by what we call feeling or affect. Internally the individual experiences a number of diffuse slowly evolving sensations such as flushing of the face, rapid beating of the heart, peculiarly vague sensations in the region of the abdomen and other body and mental changes. Objectively one observes changes in posture such as aggressiveness, flight or a reaching out for social contact; there may be changes in the color of the face, brightness of the eyes,

size of pupil, and visible perspiration. The emotional reaction then is essentially involuntary and more or less under direct control of the will. It should be noted, however, that the feeling may not be experienced subjectively until after the individual has reacted in a large-muscle fashion in response to an adequate stimulus such as a situation provoking fear or anger. Thus a person may strike before he realizes he is angry or be aware of feeling afraid only after the danger is past; or he may actually express himself in an affectionate manner before feeling the tender or love emotional feelings. This close relationship or double aspect of functioning between emotion and instinct is well known to the student of elementary psychology. All of you at some time have experienced such emotional reactions as indignation, anger, fear, disgust, hate, pain, envy, jealousy, suspicion, and love, which are largely topical and to some extent impure affects in contrast to simple, non-topical, pure affects such as blueness or euphoria. Further analysis reveals that certain of these responses are more sweeping and prolonged and more diffuse than others. These are our feelings or moods which primarily color our whole temporary thinking and action, making everything appear rosy or gloomy depending upon the prevailing basic mood.

To what extent are one's emotions educable? Each of you at some time or other has found himself gritting his teeth in response to an anger provoking situation rather than in overtly aggressive pugnastic reactions. The college student in his daily academic and social relationships with faculty, fellow students and others, must have under self-control his emotions in order that they may not be wholely objectively discerned and in particular in order that self-control in instinctive acts may not reflexly spring into operation.

The sweeping character of emotional reactions which have a crescendo-like evolvement indicates that if we are to avoid being swept away by the full-fledged swing of emotional involvements, we must early discern the affective colorings of our thoughts and actions and particularly the instinctive ones in order that undesirable emotional reactions may be nipped in the bud. When one is in the depths of despair or exotic excitement he is an abject slave to the crude and oftimes cruel emotional-instinctive part of his makeup. The preventive aspect with respect to frustrations, infatuations and other emotional entanglements may be prevented if we sensitive ourselves to the tremendously powerful

influence of our wishes, cravings, desires and longings in guiding our thinking and behavior.

Thus control of one's emotional reactions is a fundamental requisite to harmonious living both from within and in relation to one's fellows. How may emotional control be developed since emotional reactions are in the main unpremeditated or involuntary responses? Since we are the products of growth which is an involuntary process, we cannot always fully control our emotional-instinctive life by casual or direct application of the will. But as in the case of one's physical muscles, so is it possible with one's mental and emotional muscles to develop strength and controlled coördination and direction of them by capitalizing opportunities in one's daily life situations which will make it possible to develop them. This desirable state of solidarity of personality functioning is not brought about by merely thinking about the desirability of self-control, but only through exercising one's choice and decision with respect to espousal or rejection of certain emotional desires and developments. In this way we learn to direct and learn to control our emotions. The extent to which we do this in adolescence and adult life largely depends upon one's early habit training in self-control and how one meets by means of compromise or sublimation the inevitable thwarting of everyday conventional standards of behavior.

We are largely individuals who live by habit rather than by thinking, critical reflection, reasoning or even ethical suasion. No thinking person would minimize the importance of creative actions, implicit as well as overt, which means so much to the development of originality, initiative, and self-reliance. But by and large, the vast majority of our waking moments are taken care of by the quality and extent of our habit training. One's success and failure in life depends more upon the building up of habits than upon any other single factor of the learning process. Good mental health is not acquired like a coat of paint or veneer; nor is it a gift of the god's, although constitutional factors may be great assets as well as liabilities from the standpoint of the solidity of the stuff in our original endowment; nor does one's health, happiness, efficiency or success in life depend upon chance or caprice; nor can we gain desirable health habits by indiscriminate or inconsistent practices. It is only through the integrating process of weaving our thinking, feeling and action into our very muscles so that when occasion demands we will respond with the appropriate constructive reactions.

What are some of the habits which are essential to the welfare

of the individual and the group? You would all agree that habits of personal care, habits of truthfulness, of facing reality, of initiative, self-reliance, originality, and on occasion the socially desirable personality traits of obedience, docility, and conformity should all find their place in a well-rounded personality. But I would draw your attention in particular to the tremendous importance of habits of temper control, of sex control, of tolerance, constructive sympathy, a wholesome give-and-take attitude, habits of getting along well with one's fellows as well as with one's masters, all of which are essential if one is to avoid disintegration on the rocks of life's vicissitudes. In this highly mechanized and complex world of today we must cultivate not only good habits of choice and decision with respect to important or leading situations or developments, distinguishing the essential from the incidental, but also the cultivation of plasticity, flexibility and elasticity of one's thinking, feeling-attitudes, and even overt behavior in order to meet reasonably well and with a feeling of satisfactory accomplishment the more complex situations of adult life. In these days of racketeering and bold-faced violation of law and order it is essential for the maintenance of a democratic civilization that we practice a wholesome respect for law and order, for the right and property of others, and a willingness to submit to the rules of the game for the sake of ulterior benefits and altruistic considerations rather than immediate selfish gratifications or gain. Qualities of good sportsmanship in which one can gracefully take defeat should be an important part of one's training in the game of life.

But has not much been written about the harmful effects of repression? Has it not been singled out as the black plague of mental ill health? Is this not the day of freedom and self-determination? In this connection it is important that we do not lose sight of a critical common-sense perspective of alternative viewpoints, particularly profiting by the experience of those who deal with so-called repressed individuals. First of all, it must be realized that we must distinguish between normal repression and abnormal repression, between normal conflict and abnormal conflict, and also that we appreciate the fact that we have normal depressions as well as abnormal depressions in our life-span experiences. It is highly important that we realize the significance of freedom; it is not chaos or license but involves choice which in turn implies rejection of certain alternatives as well as espousal of certain others. We must learn to forego certain immediate pleasures in order to gain greater ulterior richness in living;

likewise we must learn to strike a balance between our wants and needs in order that the golden mean may become the prevailing experience. It becomes apparent therefore that it is abnormal and mismanaged repression in fumbling with highly charged emotional situations which are in conflict with ethical purposes that are harmful. It is the mismanagement of conflicts rather than conflicts in themselves which does the harm. Healthy repressions should be considered as a necessity for present-day conventional social relationships.

You have all observed the differences in temperament displayed among your friends. Some are "out-going", others are "shut-in", some make friends easily, discuss frankly their ideas, ideals, longings, thwartings or frustrations. This latter type of personality make-up finds little difficulty in entering into the spirit of games, sports and various other so-called extra-curricular activities which may even interfere with one's habit of sleep, diet and elimination. On the other hand, the more "in-growing" student is apt to be more sensitive to the esthetic aspects of his environment, to be more thoughtful and studious and oftimes more easily hurt, and shy. There is required a much greater volitional effort for this latter type of individual to get into group activities, and to make friends although he oftimes experiences a greater thrill through exercising will-power in experiencing desirable social reactions. There are also other types of temperaments, since human nature is so complex that we must not think in terms of "either-or" or even pure culture personality types. Each of us is a mixture of many temperamental qualities, each with her intrinsic positive values as well as those which possess chances of mismanagement. For example, the introverted personality may come to derive greater pleasure from her imaginative life and day-dreams than in realizing joy of concrete performance in worthwhile work habits.

But all types are necessary in a democracy such as we enjoy since it is imperative that we realize the need of a division of labor. We need those who have special ability and aptitude in details as well as those who are predominantly group-minded and bubble over with enthusiasm and euphoria. We must learn to respect the other person's personality make-up, to be sympathetic and tolerant in order that we may not accentuate unwholesome comparative differences or increase shyness, diffidence, sensitiveness, or temper outbursts by too much prodding, teasing or criticism, even though they may be given with the best of intentions. One of the most valuable emotional components of one's person-

ality which should be cultivated, particularly in this age of tremendous competition, disappointment, stress and strain, is that of humor. A wholesome sense of humor will do much to cushion the knocks of daily life and help to counteract ruminating tendencies, feelings of self-accusation, self-depreciation and disappointments.

Individual differences in emotional endowment should be recognized to the same extent or even greater than that of intellectual endowment. The two frequently do not parallel each other. Oftimes we seen an individual of superior intelligence with moronic or imbecilic level of emotional development. Thus our educational attention must be directed equally to the emotional organization of growth functioning as well as that of drawing out the intellectual process. Even casual examination or observation of a person will reveal the fact that his thinking and action to a considerable extent is influencing certain innate tendencies which we call strivings, longings, desires, cravings and wishes. One of the most important of these strivings or drives is the sex instinct which plays a greater or lesser rôle according to our constitutional make-up or nature. Some of us are more demonstrative and intense than others and crave more affection, while some of us are more reserved. But it is important that we highly respect this striving which is all too often considered taboo and consider it a perfectly normal part of our nature or personality; and that this sex instinct will eventually become the driving force that leads to its partial stages of marriage on to that of full-fledged recognition in the founding of a home and children.

Family formation will always be held as the chief function in social organization. It is within the family that one receives one's earliest training through example, guidance and supervision and thus sets his prevailing habits in social adjustment, feeling-attitudes, and outlook upon life which means so much to success and failure in later years. Here he learns to cultivate affection, sympathy and tolerance toward others. It is here that the sex drive realizes its various part stages in tender and affectionate growth in connection with other members of the family and not merely in highly exciting contacts. The individual here realizes that affection does not immediately have to flow over into segmental or specific sex activities. Wholesome common-sense cultivation of sex yearnings and colorings have an unparalleled opportunity for development in the average family.

One of the most important human attributes is that of imagi-

nation and the ability of the individual through fantasy, anticipation, idea, recollection, and even mental picturing to stir up one's emotions in a wholesome as well as in a harmful manner. It is probable that a great deal of our unnecessary frustrations and conflicts come about because of poorly guided imagination and uncontrolled desires than from anything else. Yet imagination, fantasy and day-dreams are useful and normal and should be cultivated to the full but under critical guidance. But on no account should we castigate ourselves, worry or feel ashamed of the sex component in our natures or imaginations pertaining thereto. We learn sooner or later that many of our instinctive cravings are more outlivable in full fledged fashion under certain situations and at certain times of development and that substitution by other emotions and instinctive actions and by other balancing material should be cultivated. An excellent way of taking care of this transference of emotional-instinctive tendency from undesirable modes of expression to desirable ones is through games, hobbies and the fine arts. Another important safeguard we must always keep in mind through college life is that of cultivation of well-formed habits in sticking to a well-balanced program of work, play, rest and sleep.

The college student in particular must pay attention to that very important drive called ambition. He must ask himself the question: Are my ambitions going beyond my actual capacity in terms of gaining reasonable satisfaction in my daily life? Discrepancy between ambition and actual performance must be overcome if we are to live effectively in the here and now and prepare ourselves for the work of the world. It is necessary that we balance ambition by a number of factors such as work, capacity, opportunities, temperament, and appreciation by others, but particularly by the sense of satisfaction in doing. Our perspective with respect to ambition may be assisted by developing "resting points of satisfaction" and in cultivating periods for "constructive composure", rather than lending ourselves to perpetual action and to perpetual strivings which are poorly directed and without purposeful objectives. In this way a great deal of the necessary disappointment, failure and unhappiness may be avoided. In no event should our ambition leave us with such a small margin of time that there is no opportunity for relaxation, play and desirable social pursuits.

The above discussion concerning the emotions is not meant in any way to minimize the intellectual process and the problems that come when our judgment conflicts with our desires. It is

important, however, to recognize that many of our intellectual problems are colored by our emotions and modified by our wishes.

SOME COMMON PERSONALITY PROBLEMS

The social tempo of college life bids a strong hand which entices the student into mismanagement of desires and espousal of exciting contacts. The conduct of one's leisure hour activities and social activities such as dancing, bridge, and interest in the opposite sex, to a considerable extent determines one's happiness in college life. However, we must not close our eyes to possible dangers in certain individuals to exciting contacts especially "heavy ones" which may have tremendous appeal for the moment and yet are safer to forego. The essence of the democratic spirit is that of wholesome concern for one's neighbor. While indulgence in such excitements may not create any socially harmful effects in you, the other person may not be so fortunate in habits of emotional self-control. Thus fumbling in sex-charged interests may create unhappy conflicts, unnecessary worries, preventable disappointments and ruminations. It is important that we attempt to keep in mind one's ultimate goals and ideals and their fulfilment which will do much to overcome the possibility of shattering them by experimentation with partial goals which may inevitably cause more or less harmful reactions. Thus petting parties, crushes, and sweeping infatuations must be viewed as part-functions of the sex instinct which may or may not prove harmful depending upon how one manages his emotions and their expression. In some types of individuals crushes are more or less an inevitable part of the adolescent period. However, if they are carried over into adult life, they may create unwholesome attitudes of domination of one person over the other, which stunts personality growth and often leads to unhappiness on the part of the submissive one; or a prevailing attitude of adoration may lead to bitter disappointment when it is found out that the other person after all is a human being. Likewise, the problem of self-stimulation which is more or less frequent in childhood and adolescence may become a problem if mismanaged or if it fails to be outgrown through wholesome interest in group activities.

Some may not be fully emancipated from parental ties and the craving for supervision and dependence upon one's family. In the process of personality mastery it is necessary that we gradually emancipate ourselves from parental domination and dependence upon others in order that we may gain control of ourselves, as well as self-reliance, initiative, and the ability to live

one's own life as he best sees fit. The transition from home to college places you into an environment of new freedom. Here again, there are possibilities for mismanagement of desirable opportunities in personality growth. Some who have been held down too strictly at home may kick the traces too high and consider "the sky the limit" for opportunities in realizing personality initiative and adventure. Such unrestrained aggressivity and pleasure-bent individuals may become ring leaders in breaking rules that bring no lasting satisfaction, such as eating at forbidden restaurants, dancing at questionable hotels or roadhouses, or violation of other college rules which may give a temporary kick but only lead to penalties or to disgust or disappointment. Individuals with other types of temperament faced with a new freedom may become lonely and unhappy because of the lack of the presence of those they usually depended upon for affection and attention. This type of student should be eagerly sought out by some new friend or teacher who may help to bridge the gap between home and a new world of life until the individual can find himself satisfactorily.

Certain individuals with qualities of leadership, well demonstarted by having enjoyed dominant and directive rôles in their own home town social life or academic experience, may receive a sudden jolt upon coming to college since it oftimes happens that more desirable qualities of leadership are to be found in other individuals. Here the person concerned must learn to see himself in a wholesome perspective and scale of social and personality values in relation to his fellows if he is to avoid a period of discouragement because he may now be a small frog in a big pond.

An inevitable problem of college years is the gradual evolution of one's philosophy of life, particularly one's viewpoint and opinion concerning the meaning of life and religion. Some individuals experience an unhappy period due to the conflict between emotional feelings of loyalty to one's parents and early training which may differ or conflict with new information, new objectives and more scientific facts. Such conflicts should be looked upon as perfectly normal but merely temporary pending the organization of one's thinking and feeling in view of a new setting and a new level of personality growth. The student sometimes is apt to become intolerant and somewhat supercilious and smug in his attitude to the beliefs and opinions of an older generation or to those who may not enjoy the same educational advantages. Here again, the student should not charge himself with feelings

of disloyalty to one's parents because he is forming his own opinions. This is a part of normal evolution and progress of life.

Certain individuals may take an unwholesome delight in differing with the opinions of others and in grasping every opportunity to cultivate the life of a "free lance". It is not desirable that one swallow *in toto* all that is taught, or that one accept uncritically the opinions of one's friends or one's seniors. However, from the standpoint of mental hygiene, do not make a habit of disagreeing with the group but rather cultivate winning the consensus of opinion and approval of one's best judges and friends. Thus a desirable balance and golden mean in the art of living well and wisely may be furthered.

No student can expect to be happy during college years or after college life who is not keeping in mind the vocational aspect of his training. Statistics show that 60 per cent of women college graduates marry by the age of 25. Nature will continue to be the leading inducement from the standpoint of consummating family formation. However, since the war women are more and more preparing themselves for certain work in the field of commerce or professional life. But a critical survey should be made of the likely occupational outlets for one's special training. For example, it has been shown that there were 529 students preparing themselves for commercial work (stenography and typing) for every 100 persons employed in this work. Common sense would dictate that a different vocational preparation should be undertaken in order that there may be reasonable hope of employment after one's period of training. Nor can we assume that students of their own initiative and freedom of selection choose the type of vocation for which they are best equipped by nature and training. Out of 2,000 persons examined in the Vocational Adjustment Bureau in New York City, 40 per cent of the applicants were vocationally maladjusted, square pegs trying to fill round holes. We feel that a large measure of vocational maladjustment may be prevented by wise counseling and guidance of students in order that they may choose the type of work for which they have the highest capacity, aptitude and interest. Vocational aptitude tests, exploratory courses, study of the individual's past work records and interests should be helpful data in advising the student into certain vocational and educational trainings. The main criterion of suitability to one's work is the degree of fitness measured by the satisfaction and sense of achievement gained therein and freedom from strain and worry. Each should ask himself the question: What am I good for? What things can

I do well? Then create opportunities to actualize one's potentialities in these particular lines. It is highly important that we do not get into the habit of fretting because we are not doing the "something else" for which we imagine we are better prepared or temperamentally suited. Do not be discouraged if you find your abiding and real interest only after considerable floundering. Human beings will always find it necessary to learn by trial and error although our objective should be to prevent unnecessary disappointment and failure reactions.

SOME MENTAL HYGIENE GUIDE-POSTS

What does psychiatric experience suggest that each of us cultivate in order to prevent whatever may interfere with health, happiness, efficiency and social adaptation? What may we espouse in order to improve the tenor of our living since everyone possesses possibilities for self-improvement? The following suggestions should sensitize us to certain of these helps:

1. Whenever we are suffering from complaint problems concerning one's health, social adjustment, and emotional well-being, we should talk over our problems with the faculty counselor, college physician, or a competent friend or relative. The mere unburdening of one's troubles will do much to bring about a feeling of relief and to create a different perspective. Thus monumental difficulties may become leveled to insignificance.

2. Seek to investigate causes of stress and strain, conditions which are causing the shoe to pinch and which lead to body and mental protests in the form of complaints or symptoms. Certain of this stress and strain may be due to poor physical health in which case one should seek the services of one's physician. Correction of physical disability is essential if we are to profit by our opportunities in work and social obligations. A readjustment of the curriculum, reshaping of the study periods, cutting down on certain social activities, may all be necessary to eliminate or modify undesirable strain.

3. Learn to control your emotions and to look beyond a period of immediate gratification. Cultivation of a sense of humor will be a tremendous lift in meeting happily daily friction and disappointment.

4. Accept one's sexual nature with its occasional arousals as normal. Cultivate good habits of following a well-balanced program of work, play, rest and sleep which will do much to keep us from being side-tracked into unwholesome emotional whirlpools. It is through our habits of interest and activities such as sports and hobbies that we sublimate our cruder instincts.

5. See to it that your ambitions are kept in fairly close contact with actual performance in order that you may benefit from a growing sense

of achievement and satisfaction day by day. Let your chief joy come from work well done rather than in toying with day-dreams and fantastic wish fulfilments.

6. Remember that minor conflicts during the period of emancipation from home ties, and certain habits and points of view may cause feelings of disloyalty or resentment. These should not be looked upon as abnormal but rather as desirable questioning attitudes during the process of shaping one's own philosophy of life.

7. In order to remain on solid ground, cultivate the habit of winning the approval and consensus of opinion of your best friends and judges concerning the validity of your plans, enterprises, and contemplated activities. This practice will have a leveling effect in counteracting "smartness" or "bravado" flings of behavior, as well as in giving you new points of view and a feeling of security.

8. Choose as your vocation something you really are fitted by original nature to do well and because you really like to do it, and the chances are that you will enjoy happiness and efficiency in your work.

In these days of national recovery the watchword is "coöperation" rather than competition. It is through sharing your problems with others, particularly with an older and presumably more experienced generation that much unnecessary floundering may be prevented and the time element constructively capitalized. Those who have gone through similar experiences, although in somewhat different economic, political, and social circumstances, will nevertheless be able to offer you some true tolerance, compassion, understanding and a sense of humor without bickering, prodding or teasing. Cultivate habits of talking your problems over with such persons you trust and admire and you will be surprised how the cardinal objectives of mental hygiene, namely the realization to the full of health, happiness, efficiency and social adaptation may be brought into being.

REFERENCES

Howard, F. E., and Patry, F. L. Mental Health: Its Principles and Practice. New York: Harper Bros., 1935.

Patry, F. L. Outlines of Personality Analysis and Reconstruction. New York: National Child Welfare Assn. (70 Fifth Ave.), 1935

GOSSIP AND THE INTROVERT *

By FREDERICK B. DAVIS and PHILLIP J. RULON
HARVARD UNIVERSITY

A FEW years ago Guthrie [1] found that a test of campus information administered to college students did not seem to measure the same thing that a test of introversion-extroversion did. He experimented with a total of 365 men and women, mostly freshmen who had been six weeks in college.

He obtained scholarship scores for these students by averaging six grades received in academic subjects. The students had all been tested either with the Army Alpha Test or with a special test administered for college purposes, and the standing of each student had been reported in terms of a centile score.

The gossip test employed had 96 items of the multiple-choice type and the odd-even reliability corrected by Spearman-Brown formula was .72 when computed from the scores of 276 of the subjects. As a measure of introversion, the Colgate Personal Inventory C2 was administered. When this was scored by odds and evens and corrected as above, the coefficient from 327 subjects turned out to be .60.

That the Colgate Inventory scores had little or nothing to do with intelligence was indicated by a correlation of .01 obtained from 189 of the subjects who took both of these tests. But the low correlation between the Colgate scores and gossip scores indicated that the Colgate test had little more to do with non-academic information than it did with intelligence, the correlation beween gossip and Colgate scores being —.08, with an estimated probable error of .05. Using the reliability coefficients presented in the report, it is possible to estimate the value of this correlation coefficient when corrected for attenuation. The obtained value, —.12, is barely equal to twice its own estimated probable error, and cannot be described as very significant from a statistical standpoint.

Correlation between gossip test scores and intelligence test centile scores amounted to .40, which is in the neighborhood of ten times its own estimated probable error. That the gossip test

* Received and acknowledged January 29, 1934.

[1] Guthrie, E. R. "Measuring Introversion and Extroversion." Journal of Abnormal and Social Psychology, Vol. 22, pp. 82–88, 1927.

was not simply another test of intelligence, however, is indicated by the fact that the correlation between gossip and intelligence, when corrected for attenuation, does not nearly approach 1.00, and further by the fact that gossip test scores correlated with scholarship records only to the extent of .06±.04.

Using numerical relationships presented in the report, it is possible to compute the partial correlation between gossip test scores and Colgate Inventory scores, with intelligence held constant. The resulting value, .09, does not quite equal twice its own estimated probable error, and is, in fact, but slightly different from the raw correlation, —.08, between gossip scores and Colgate scores.

Almost by definition, introversion is the tendency to be mentally occupied with one's personal affairs to the exclusion of those of the external or impersonal world. The items appearing in introversion-extroversion tests typically concern keeping diaries, reactions to praise and blame, reticence, day-dreaming, sensitiveness, anxiety, and the like. Hence we could expect the extreme introvert to care little about trivial happenings to others, and a test of campus gossip should show pronounced negative correlation with tendency to introversion in college students. The failure of Guthrie's findings to indicate any such correlation leads to the choice of two conclusions: either the results have come out of inconclusive data, or the idea of extroversion (as the opposite of introversion) must be divorced from the idea of *awareness of* externals and be associated instead with the individual's *behavior toward* them.

Further experimentation does not indicate that the former of these conclusions is the preferable one. On the contrary, Guthrie's results are borne out in rather surprising agreement with those of an experiment in which somewhat more control of experimental conditions was obtained.

The experiment aimed at measuring the same traits as did Guthrie's. At the time of their entrance into the Bridgewater Massachusetts State Teachers College,[2] all of the students included in this experiment had been given the Otis Self-Administering Test of Mental Ability, Higher Form A. The records of this testing had been preserved in the form of I.Q.'s, which were transmuted directly back into raw scores for the purpose of this experiment. Separate scores for the odd and even numbered items were not obtainable from the records, but the

[2] The authors are indebted to Professor Brenelle Hunt and Dean S. Elizabeth Pope for coöperation in arranging for this experiment.

reliability of the test when administered to the experimental group could be estimated from published data. Otis [3] gives 2.56 and 2.68 as values for the probable error of an individual's obtained score on this test. The reliability coefficients are given as .917 and .925, respectively, as obtained from the groups from which the values of the probable error were computed. From these data it can be deduced [4] that the standard deviations of the distributions of scores for these two groups were 13.2 and 14.5, respectively. Taking the average of these two values, or 13.8, as the standard deviation of a distribution of scores in which the reliability coefficient turns out to be .92, and applying the formula for estimating the reliability in one range, knowing it in another,[5] we estimate the reliability of the Otis scores in our group of subjects to be .80. It will be observed that this reliability coefficient compares very favorably with the reliability, .78, of the intelligence measures used in the previous experiment.

The subjects used in the experiment were 83 in number, and were all girls, living in dormitories on the college campus. Only juniors and seniors were employed, as it was felt that the lower classes would not have had as much opportunity to become aware of campus gossip as those in the upper classes. This suspicion was borne out when the 33 senior class girls obtained a mean gossip score significantly higher than the 50 juniors.

The scholastic standing of each student was obtained by averaging four grades taken from the college records. These grades were so chosen that all the averages were computed on the basis of the same four courses given by the same instructors. To minimize the effect of differences in the ranges or spreads of instructors' marks, the grades for each course were reduced to numerical values by assuming a normal distribution of talent underlying the grades and assigning to each grade letter the average sigma position which would be obtained by the number of persons receiving it, were they to fall into a normal distribution in the relative positions indicated by a comparison of their grades with those of their classmates.[6] The reliability of these scholastic ratings, as estimated by correlating one-half of them against the other, and applying the Spearman-Brown formula, was .69, which is somewhat lower than the .76 obtained by Guthrie

[3] Otis, A. S. Otis Self-Administering Test of Mental Ability, Manual of Directions and Keys. World Book Company, 1928, p. 12.

[4] See Kelley, T. L. Interpretation of Educational Measurements. World Book Co., 1927, p. 171, formula 16.

[5] Kelley, op. cit., p. 207, formula 53.

[6] See Kelley, T. L. Statistical Method. Macmillan, 1924, p. 101.

for the average of his six course grades. The difference between the two reliability coefficients may be due entirely to the difference between the number of grades entering into them. An application of the generalized Spearman-Brown formula [7] indicates that had six grades been used in the present experiment instead of only four, a reliability of .77 might have been expected. Thus our reliability per unit of grade record compares favorably with that obtaining in the previous study, while our grades have the advantage of coming from the same source for every pupil.

As a measure of introversion, the Bernreuter Personality Test was administered to the girls and scored by the B3-I key. This scoring was done by odds and evens and the resulting correlation coefficient was "stepped up" by the Spearman-Brown formula to yield an estimated reliability for these scores of .82, which is appreciably higher than the .60 obtained by Guthrie for his Colgate scores.

From information supplied by one of the senior girls not used in the experiment,[8] a campus information blank was constructed, containing 97 multiple-choice items of the three-choice type. The items were designed as far as possible to be entirely factual, and none was included which it seemed possible to "figure out" without a definite knowledge of the facts. Material which had appeared in the college paper was likewise avoided. That the attempt to construct an information test which was not simply a measure of intelligence was fairly successful is evidenced by the low correlation found between scores obtained from it and from the Otis test. This correlation took the value .04, which was accompanied by a probable error of .09, and contrasted sharply with the similarly obtained coefficient of .40 in Guthrie's study.

No time limit was imposed during the administration of the campus information blank, but everyone finished within twenty-five minutes.

Computation of the correlations between Bernreuter scores and gossip test scores resulted in a coefficient of —.04 for the 83 girls employed, which coefficient is subject to an estimated probable error of .07. This negligible negative correlation between information test score and introversion score agrees very closely with previous results, which showed a negative correlation barely exceeding its own probable error.

[7] See Holzinger, K. J. Statistical Methods for Students in Education. Ginn and Company, 1928, p. 168, formula 48.

[8] The authors are indebted to Miss Elizabeth Lawrence, President of the Student Coöperative Association, for this assistance.

Treatment of the data separately for juniors and seniors yielded similarly negative results. In the group of 33 seniors the coefficient was —.14 with a probable error of .11, and in the group of 50 juniors, the coefficient was .03 with a probable error of .09. In view of the large probable errors attached to the results from such small groups, no particular importance can be attached to the difference between the junior and senior results. In neither case do the coefficients approach the neighborhood of statistical significance.

As the reliabilities of the measuring instruments were fairly high, correcting the above coefficients for attenuation fails, as in the previous study, to yield a result of any appreciable size. For the entire group of 83 girls, this corrected coefficient was —.04±.10. In the junior and senior groups separately, the corrected coefficients approached no nearer to statistical significance than did the uncorrected coefficients reported above.

Removing the influence of intelligence by means of partial correlation leaves these coefficients practically unchanged. In the total group the correlation between campus information score and personality inventory (introversion-extroversion scale), holding intelligence constant, becomes —.05±.07 for the combined group of 83 juniors and seniors, as compared to the raw coefficient of —.04 with the same probable error. The coefficients of —.14±.11 and .03±.09 for the senior and junior groups respectively, are the same values as obtained for the raw correlation coefficients.

These partial correlation coefficients are even lower than that which may be computed from Guthrie's data, namely —.09±.05. This may be due to the introduction of additional controls in the later experiment and the consequent reduction in the ranges of the variables studied.

In any case, the agreement between the results of the two studies is so close as to throw serious doubt upon the promise of the gossip or local information test as a measure of introvert tendencies. The introvert, as labeled by introversion tests, seems to be about as familiar with the everyday goings-on in his environment as the extrovert is, and any difference between the two psychological types with respect to this feature of their mental lives must be sought, apparently, in the extent to which they use these goings-on as their stock in conversational trade or intellectual rumination.

NOTES ON HABITUATION IN MENTAL DERANGEMENT *†

By GEORGE VAN NESS DEARBORN, M.D., Ph.D.
U. S. VETERANS' ADMINISTRATION HOSPITAL, NEW YORK CITY

THESE remarks present a brief and very inadequate summary of the biology of habituation and then venture to suggest a definite path or two along which, possibly, some practical applications, useful for the alleviation of certain types at least of mental derangement, might be developed. Habit is a type of physiologic psychology that seems to have been comparatively neglected in its relations to psychiatry. Because habit is one of the most primitive, universal and powerful effectors of animal life, to say nothing of vegetable organization, this ignoring all the more cogently exhibits the regressive lack of rapport between the basal science of psychology and practical and theoretic psychiatry, which is properly one of psychology's applied specialties. No special credit appertains to those psychiatrists who are so materialistically hidebound that they ignore the light offered them from many directions by the scientific and systematic knowledge of the mental process. Can it be that more minds than those of the schizophrenics are schizoid? One certainly has to think so sometimes. The reason probably is that most of them do not know what modern psychology has to offer.

The basal process of habituation really needs no formal definition. In its broadest usage it means adjustment to repetition, the adaptations that inevitably take place in matter to the reiteration of some physical influence on it. Supposing a new volcanic mountain upheaved on a tropic island; the gullies or channels inevitably made by a week's rain running down its sides would perfectly represent the principle of habituation. Machines of wood, of brass, of steel form habits well defined and well known to the people who run them. You are advised, you know, to run your new automobile slowly for the first five hundred miles or so—until its various parts have habituated themselves to each other and you to them all. We know how quickly and deeply our clothing forms habits, in most cases contrary to the arbitrary

* Received and acknowledged October 9, 1934.

† Published with the permission of the Medical Director of the United States Veterans' Administration, who assumes no responsibility for the opinions expressed or the conclusions drawn by the writer.

canons of the dandy to whom creases in some places and the entire lack of creases in other places sometimes mean more than kindness to the wife of the moment. So intimately is the work of the typewriting machine connected with intelligence that its habits are known to be not only numerous, mysterious, permanent, but annoying, seemingly wicked and almost human in their persistence and variety.

For our present purpose obviously it is with human protoplasm that we are concerned in considering habituation—and surely living matter and especially neuroplasm and myoplasm (nerve and muscle), in general follows the dictum of Lord Byron in regard to one of his seductive heroines: "wax to receive and marble to retain". Protoplasm being liquid, or as a whole, colloid, this marvelous retention is understandable only because the substance is what we term alive. Through this mysterious process, at heart metabolic, chemoelectric perhaps, protoplasm not only is sensitive to the properly adapted stimuli but it retains them with a permanence and minuteness not at all understandable at present. The classic extreme instance of this, well nigh trite in its familiarity, is the well authenticated case of the house-maid or something whose "master" was in the habit of reading aloud in his study endless pages of Hebrew, sometimes in her presence and hearing. Despite her complete ignorance of Hebrew, during a fever-delirium she muttered verbatim long passages from the text that her cortical neurones somehow had recorded and now were reproducing mechanically.

It is only when one realized the surpassing mechanism of the brain that is capable of so receiving and reporting that the phenomena of habituation have a scientific basis in a rough general understandability. The nature of the "memory-traces" in the concatenation or, better, the felt-like mass, of neurones is still *sub judice,* judgment awaiting more knowledge of the nervous impulse. Modes of electric or of chemical "vibration", static strains, structural interknitting, ameboid adjustment, osmotic adaptation—all of these and others, singly or together, may one day give us the greatly sought and vastly essential secret of neuronal action. The new idea as to the atomic structure, protons and electrons in double-phased relationship or what not, make still more chaotic what we try to know about this matter, this form of living matter. At any rate the secret of habituation, like the secret of so much else in physiology and in psychology, awaits this knowledge (so simple doubtless when we know it!) for its

revelation. Habit in organisms is physical memory, ever more and more deeply graved.

The word, physical, in the last sentence needs a word or two of emphasis. Personally as a monist, I seem to be unable to think of any sort of "traces" of habit or of memory in a mere series of experiences, in the mental aspect of our psychophysical life. And really one would naturally not expect traces of any sort in any kind of an "aspect",— the two concepts are incongruous. This may mean a pure idealism, that all matter is mind, for it can't possibly mean the opposite, that all mind is matter. Metaphysic aside, we are safe in saying that a "mental" habit has the vestigia on which the habituation depends for its very existence in *neuronal* relationship, the neurones being taken as the sign or the symbol of whatever muscular and glandular relationships are concerned in the production of the ideas concerned.

Human life certainly were inconceivable without habituation. As William James' classic chapter emphasizes, habit is much more than "second nature", it is nature itself, the very essence of our psychological nature.

Prof. E. H. Lindley years ago after careful study of 662 cases of overhabituation in children and in adults, decided on ninety-two classes of motor habits, "automatisms", or habit spasms. These are well worth quoting for our purpose, especially as many of them bear on the "mannerisms" of the deranged. "Head: Held on side, move sideways, move up and down, move with pen, jerky movements, move. Face: Grin, grimace. Eyes: Fixed, wink, close, twitch, roll, squint, bulge. Ears: Move. Forehead: Wrinkle, frown. Mouth: Twitch, drop corners, chew, move. Jaw: Bite, chew, put objects in, clench, move sidewise. Lips: Draw in and out, pucker, move, work, bite, press, twist, suck, chew. Tongue: Protrude, move sidewise, move in and out, move with pen, bite, chew, roll, in one cheek, suck. Hands: Play, clasp, clench, rub or scratch, put in pockets, move. Fingers: Play, drum, mark on paper, move up and down, point, move, snap, pull. Arms: Fold and unfold, jerky movements. Body: Sway, twist, shrug shoulders, fidget, rock, turn away, move. Legs: Cross, move, move knees, twist, raise heel, twist heel. Feet: Sides of feet, stand on one foot, right on left, left on right, rise on toes, rock, lift one foot, move, stamp, wriggle, cross, tap, shake."

One principle of psychomotor action makes the formation of habits and the difficulty of avoiding or of breaking them understandable more completely than without this principle, namely:

Studies of kinesthesia have indicated that the phase of this sense that has to do with the *actuation* of an action is normally *pleasant;* while the phase concerned with restraint or *inhibition,* far more conscious than the other, is unpleasant, *disagreeable.* (Neuromuscular fatigue alters this rule—it applies only to the unfatigued action-system.)

Another principle of kinesthetic psychology that may be mentioned in passing is that the kinesthesia becomes, with habituation, repetition, less and less conscious, with the introspective result that while strictly new voluntary movements are almost painfully conscious, habitual voluntary acts are less so, reflex kinesthesia is largely subconscious, and automatic motivations wholly so (unless pain be present). This fact lessens more and more the individual's awareness of his overhabituated behavior, so that he ignores the habits after a while because they go on almost unconsciously. And this lessens the likelihood of spontaneous restraint and habit-breaking. This must be actuated from without by others.

Here, then, in this pleasure-pain ratio is a fundamental fact of psychology which makes continually for a minimizing of the control over the mechanization of action, and therefore for the strong tendency to habit formation as we know it. True voluntary movement, I say again, is difficult and unpleasant because unusual and its essence certainly is inhibition. On no other basis of fact is the normal distribution of bodily behavior between the four types (automatic, reflex, habitual voluntary, and strictly voluntary) understandable. The higher the evolution the more complete the restraint and the personal control—human self-mastery. As a sort of self-demonstration of the relative unpleasantness of the kinesthesia in the restraint or substitution of a fixed motor habit, I recommend that the reader try the matter out for himself on say some habit connected with the making of his toilet or on any other long-fixed mechanical procedure of his life. It will be quickly seen that it is not only a matter of the training or the non-training of an action-system, but a matter also of actual restraint or the bending of a behavior-mechanization. (For an actual example see below.)

Another foundation-principle of the psychology of habit is that habituation is inevitable when an unit of behavior is repeated. One can no more prevent the formation of a habit if he continues to repeat a movement than he can add to his stature by taking thought. In other words the will has no restraining influence over the "deeper" "graving" of the "traces" in the brain. This

is the psychophysiology of the classic axiom, "The mills of the gods grind slowly but they grind exceeding fine". But yet, one is frequently surprised, especially in himself!, to see how *fast,* too, they grind. This old Latin verse should be one of the large-type, first-page mottoes or slogans in every edition of the Mental-Hygiene Prophylaxis Sun, years on end. Joseph Jefferson's "Rip Van Winkle" beautifully illustrates the continuous contest between the total man sometimes and his brain, between his desires and his limitations imposed by the raiment of mortality.

To the four more or less familiar principles of habituation, habit-formation, to be found in some terms or other in the textbooks of psychology, we must add one or two for consideration in the case of the mentally deranged. The four "laws" are first, the degree and the persistence of the attentive interest of the individual in the to-be-habituated act (this attentive interest being very frequently a biologic and instinctive interest, perhaps little conscious, and often positively or negatively reducible to the pleasure-pain or pleasantness-unpleasantness balance largely motivating our life). The second principle, is the frequency of the repetitions of the act, the other habit-factors being unchanged. The third classic principle is the final total number of repetitions, the other factors being unchanged. And the fourth (inverse) factor is the plasticity of the neuroplasm and of other active forms of protoplasm (this being normally a matter of personal age and pathologically probably of sclerosis, and possibly of some innate superiority of the neuroplasm allied to that of "genius").

The fifth habituation-principle, of special application to psychiatry, is the persisting innate or acquired relative vigor or weakness of personal (neopallic) inhibition or control of the realized habituation, especially if disadvantageous to the average welfare of the individual in a social community. The low degrees and low persistence of this control is conspicuous in constitutional states of the various personal inferiorities, but gets its maximum in schizophrenia and the other "malignant" dilapidating, dementing psychoses. These states exhibit the behavioristic limit of habituation, and the logical limit of personal control, regulation, adaptation. It is worth noting, however, that men and women whom no one could class as deranged in any common usage of the term, not so very infrequently exhibit the extremes of anti-social habituation almost expected in the inferiors and in the psychotics of some types. In other and familiar terms, we all, or most of us, certainly are crazy in some particulars. But the ideal individual of the really educated future will reach more

or less to the ideal opposite of this psychotic look of habit-control and find himself as he grows to manhood the supreme but kindly and coöperative dictator and master of every portion of his organism whose voluntary control would not be injurious to the mental freedom of the being now at last really a *man,* in the Shakespearean sense of *"This was a man".*

For the sake of relative scientific completeness we should rehearse that the function of habit in life (it seems to be relatively but not wholly useless in non-organic mechanisms) is in furthering adaptation and therefore our evolution; facility and so economy of energy, time, and variability; and freedom of the individual for the higher efficiency which the cortical neopallium certainly represents in his brain.

As already has been stressed, habituation works disadvantageously as well as beneficially, and moreover it acts so not only to mechanize bad habits positively, but negatively to prevent (by crowding out, so to say) the persistence of the "good" habits of the patient when he was taken ill. Here is direct evidence that we are justified in saying that habituation is one of the most basal and conspicuous factors of most varieties of mental derangements. My own observations lead me to believe that habit plays so large a part, indeed, that to abstract its effects is to leave a balance of pure psychosis, so to say, *whose relative insignificance would surprise most psychiatrists.* And, as I shall try to show, since it is well within the powers of a modern applied psychology to overcome most bad habits when properly handled, the outlook for curing some psychoses at least is distinctly more encouraging as science goes on and on.

Homologous to Professor Lindley's ninety-two classes of more or less "normal" habits (mostly less normal certainly) one might follow the custom and divide abnormal habits, excepting those of thought and of feeling, under the four headings, namely those of: 1. Sensory and of central origin (anesthesias, hyperesthesias, paresthesias, analgesias, aboulia, ecstasy, insomnia, etc., etc.). 2. Those primarily of neuromuscular nature, including herein affections of the vegetative musculature as well as of the voluntary. 3. Neuroepethelial habits, not in practice always separable from the preceding group. 4. Metabolic habits proper including importantly the fixed usage of at least thirty substances, as noted in the literature.

I wish to suggest to those of you, if any, who shall do me the courtesy of reading these notes on habit, that you must try to *read into the word habit as here used habits of thought and*

feeling, mental habits, as well as the habits largely motor usually denoted by the habit term. Otherwise you will find even more cause for complaint against the paper than properly with all its faults it deserves. The word habit includes both "kinds" (reducible theoretically to one).

Properly speaking the grade of one's personality is proportional to the freedom of his will—among other things—to the perfection of his bodily control. This means the average perfection in the double sense of the number of action units under his will and in the degree of their habitual management and normal control.

Perhaps I may be allowed to repeat a page or two from one of my four articles on habit and habit-bending in *Mind and Body,* beginning in October, 1918 (reprinted from *"The Mother's Magazine"*): Let it not be supposed that this complementary opposition between mechanical impulse and unmechanical control (self-control), is a mere theory of ethics or of academic psychology, careless more or less of practical living. On the contrary, this difference in import pervades the child's entire mental and motor mechanism of nerves and muscles and glands, the action-organs of the boy or girl, completely. The nerves especially, the great uniting system of the organism, are thus divided and through them the rest of the body. Thus we have in plain opposition the restraining, self-controlling "cortex" (gray matter) of the brain on one hand and on the other the spinal cord and that "autonomic" part of the nervous system which makes the viscera (heart and intestine, for example) work in harmony with the other processes of the supporting organism (blood, skin, glands, muscles and all the rest). Without an appreciation at least of the existence of this far-reaching opposition in the bodies of our children, underlying, therefore everything they may do, the nature of habit, like its control, is incomprehensible. Its intrinsic anatomical and physiological reality and importance should be fully accepted.

Inasmuch as these two (logically) opposite tendencies do actually get along together and even combine to make a life not pleasant sometimes to leave, it is as plain as might be that there is adjustment of a sort between them, indeed, that each is but an aspect of a whole. What the boy actually does, then, from minute to minute is always in reality a *balance* of these two sets of human tendencies, one set on either side, and each with many more or less weighty factors. A normal personality, young or old, involves a perfect reciprocating balance between the vegeta-

tive (or supporting) and the personal; between the mechanical and the free; the pleasant and the primarily unpleasant; the impulsive, instinctive, emotional, and the ideational or purely intellectual; between the easy way and the primarily hard way which the boys and girls will follow just in proportion as they develop true and adequate manhood or womanhood. This balance-principle is everywhere almost in the organism, for the more we learn about the working of the body the more varieties of this basal balance appear.

The ideal behavior, then, involves perfect balance, perfect sanity of action, "the golden mean in all things" of the ancient sage, "life according to nature", all things but "nothing too much", and all in sobriety; every function exercised in its own wholesome way, but always in moderation in the balance ideal behavior demands; stresses and strains in all directions but all in equilibrium always. It is somewhat as if you made a large "beautiful" mold of wine jelly and turned it out to stand on a golden platter. Physics teaches us that under such conditions numerous stresses and strains equalize each other and so maintain the balance of the whole, each accommodating just enough to allow the colloidal mass to keep its equilibrium. But suppose by some accident either the ingredients were not properly mixed, or that some dissolving chemical substance fell into it at one point, thus breaking up this perfect balance for the moment or permanently; then the perfection would be destroyed because adaptation could no longer take place. From even so crude a metaphor be it understood how habit is negatively related to an ideal personality,—such would have no habits at all in the common usage of the term habit of which most of you mothers and teachers are thinking. Such a jelly-like undreamed paragon of boyhood or girlhood would maintain so perfect a continuous control over every free aspect of the organism, mental and bodily, that nothing could happen ever because a perfect reason was always in perfect control of a perfectly adjustable machine. One sees folk who suggest this very state sometimes, usually men or women of fifty or sixty; and we are prone to fall back and pity them even while we admire; soon do we tire of this human glorious Southern California and long for the occasional meteorological unbalance of little old Massachusetts! Much as the writer dislikes to suggest these abstract principles, even by a crude simile, in this case it is necessary, for, as will be fully understood later on, the chief practical problem in the training of actual boys and girls is reasonably to maintain this homogeneity and this

balance between all parts of the personality, thus alone keeping the personal voluntary behavior free in its eternal vigilance over the individual life. We know now that even in young children this is a perfectly feasible method, this way of putting the proper egoism of the child in charge, with its eternal vigilance.

As the great Emerson long ago pointed out, then, self-possession in the physiological sense is an ideal of individuality. The basal aspect of this is persistent refusal, years on end, to be habituated—the formation of a *well-fixed habit of forming no disadvantageous habits.* Of being master of one's soul, and body, both. If one defines this disadvantageousness in terms of social expediency, one has no mean definition of sanity, of mental normality. In other words, no person who has and maintains a freedom from all socially disadvantageous habits of thought and of action can be mentally deranged to psychoneurosis or psychosis. Of course the current definition of insanity is not at all scientific; it is only expedient for practical purposes.

The understanding, then, of the psychology and the physiology of habituation constitutes a fundamental part of the theory and the practice of mental hygiene. To teach the child to be always master of himself in the technical sense I have suggested is to go about as far as one can go toward the prophylaxis of mental derangement (save through inheritance). Insanity among psychologists, psychiatrists, and physiologists, I venture to say, is rare. If this indeed be so, it may be partly because these realize effectively the overwhelming force of habituation, and persistently forefend against overhabituation from the very beginning of any antisocial psychotic habits of thought and of action. They can keep themselves at least relatively normal, and most of them do so. It is largely for this reason that the elements of psychiatry, as of psychology and of sexual science, should be considered effectively the inalienable birthright of every child. And is it not vastly more important than algebra and the details of ancient history?

If any (possible) reader be in doubt as to the great frequency of overhabitized normals, all he has to do is to look about him with the scientific eye of observation among his own acquaintances, relatives and friends. How few he will find, if he does this, who are not obviously "slaves" of this basal biologic tendency! Men who smoke too much, exercise too much, "drink" too much, play cards too much, work too hard, worry too much, sleep too much, play golf too much, drink too much coffee and tea, eat too much; women who play bridge too much, gossip too hard,

drive too much, strike their children too much, scold too much, read too many detective stories, cosmetize too much and too often, dress up too much, cater to their husbands too much, plus too many and too much of the habits mentioned for men. Most of these victims of themselves realize their slavery but make only half-hearted efforts, if any at all, to escape into a higher stratum of personality, out of their mechanization. And these are but off-hand examples of their general overhabituation.

And then there's another sort of overhabituation among normal adults, the kind that does not necessarily involve any major "bad" habits such as these, but which shows lives of needless monotony, ennui, boredom, wretchedness, even to suicide, because lacking the self-protective, educated, intelligent broad interests of one who is wise, really realizing the wonder of the world and the glory of their Marvelous Adventure—Life.

A logical conclusion from a survey of behavior obviously is that psychoneurosis and psychosis (mental derangement) are, in part, states, psychophysical states, of *overhabituation*. If we make all the indispensable allowances for the quite unknown factors physiological (such as those at their maximum, that is, in negativisms, onanism, coprophagia, etc.), largely central in origin, I have no hesitation in asserting that mental derangement is in fact conspicuously a state of overhabituation. This may be even one of its most characteristic factors.

We *all* of us tend to be overhabitized but the mentally deranged are grossly overhabituated along lines characteristic in general of each type of derangement. Mind is mind wherever and whenever found, so that deranged mental process is subject to the same mechanization as is mentation classed as normal.

But in somewhat an easier and a worse way are the mental functions of the deranged kind liable to overfixation by the universal stress of habituation, so absent-minded, so to say, is its controlling personality. Take for example ordinary delusions and the ordinary auditory hallucinations—is it not obvious that habit plays the dominant rôle in the fixation in behavior of both of these phenomena? The endless repetition of insulting epithets so extremely common in case-histories has no conceivable neurological cortical basis without the fixation by habit. The same is true of the delusions that recur in the individuals years on end sometimes—habituation makes their continuance more easily understood. The same may be true of stereotypy and even of echolalia, coprolalia, echopraxia, etc. Indeed all compulsive

phenomena are explicable only when one realizes their habituation. The reasons for this are not far to seek:

1. In the first place the instinctive tendencies are more erratic and much stronger oftentimes because from the start perhaps uninhibited or even encouraged. This applies of course both to overt acts (such as onanism or pederasty) and to the day-dreaming or imagining connected with such affective desires and behavior. Attention may be concentrated within—introversion carried often to its possible limit of intensity.

2. There is in general a narrowing of interests in the mentally deranged, or it may be (as even in manic states, which show mechanization least of all) an aprosexic superficiality of interests and of attention which becomes, under some physiological drive still unknown, a matter of habit, just as depression becomes so and much more easily. Anyone who has ever had the queer mental experiences during a slow convalescence from an exhausting disease such as typhoid or pneumonia or a pyemia knows how large a part habit comes to have in the convalescent behavior in its narrowed range and novelty.

3. The plain and frank feeling of indifference when one is in the hands of a mental tragedy and disaster, the feeling of laissez-faire, stands for a lowering of restraint over a degree of mechanization of thought and action which in these premises is only one factor of the general personal depredation and calamity. When one's very "soul" is being undermined and is disintegrating, why try to carry on? There are relativities in motivation as there are everywhere else. As an illustration of how habit does much to determine psychotic behavior, and so to make mental conditions seem to the observer worse than they are, I may relate an incident in a hospital ward this very day: The mother of a schizoid and dilapidated hebephrenic praecox about 35 years old died yesterday suddenly and unexpectedly; when the patient saw her last, a month ago, she was seemingly well. On informing him, after the usual cautious preliminaries (needless in his case, it appears), that his mother was dead, he remarked in a very casual manner, "Well, that's her hard luck". He then made some homicidal threats against one or two of his relatives. But he was soon found with tears in his eyes standing at a window gazing out, and he stayed there for some time. For some years, then, this "flattened" man had been habituated to disregarding as trivial (compared with his own inner world) the motives coming from without—a negative habit of disregard that belied to some extent his actual affect, even over the death of his own mother.

To take up the present nosologic "types" of mental derangement, certainly in large part ephemeral and temporary (see E. J. Kempf, "Psychopathology", for example), in order to point the habits, positive and negative, motor and mental, permanent and transient, etc., conspicuous in each, would be conclusive evidence of the writer's contention that mental derangement is characteristically a condition of overhabituation, among other characteristics. But I believe that in loci as complex as are human personalities, making so very numerous the different habits that might be enumerated, a mere sampling of conspicuous habits will properly suffice. At any rate, the writer is willing to weaken the force of the evidence for his thesis on that basis, saving space and time and other things still more important:

The psychoneuroses exhibit habits that mostly are more mental than many that are seen in the psychoses. Yet in psychasthenia, for example, one sees a group of habits almost purely motor at length, although from the first motivated by phobias preponderantly ideal. One thinks at once of such habits as walking so as to avoid stepping on cracks, washing one's hands a dozen times in succession, measuring angles unendingly, and so on more or less through the list of ninety or more phobias usefully listed in Stedman's Medical Dictionary. All such reactions are habits and they measure in a way the mental derangement.

Hysteria is so obviously largely a matter of habits, and frequently of contagious habits, that surely one need not specify examples. One may recall how dominantly suggestibility is a matter of habit, and how conspicuous it is in hysteria. Anxiety neurosis is in the same case essentially, only that here the habits are of narrower range and mostly within the protean phenomena of the emotion of fear,—and an emotion itself is an hereditary habit of the personality as a whole, including consciousness. Neurasthenia, so unfashionable a term just now, but still mysterious, shows conspicuous habits, mental, neurologic and metabolic, which it may take the patient a year or years to "snap out of". A modified hypochondria, a habit of paying undue attention to one's symptoms, is a prominent example of these, sometimes leading to another of its habits, insomnia and so to morning-tire.

As already has been proposed, we may omit any attempt to list even the dominant habits of "the" psychoses. But one readily thinks of the habits of the old-time paranoiac, especially of the phantastic sort, after a little time a "bundle of habits", mental and behavioristic both. The hallucinations and the delusions of paresis are strongly habituated after some time, and their con-

tinuances, often for so long, can be explained on no other basis. Thoughts cannot, to my mind at least, have any primary physical neuronal basis that would so mechanically recur. I wish to stress this statement a little, for, on this principle, it seems likely that many of the repetitions of words, ideas, delusions and other ideational and vocal phenomena, so conspicuous in some cases of psychosis, depend. I mean that the mechanism-aspect of language and speech, not being primary to the mental aspect, is not likely to be by itself habituated. But after all this may be an argument too close to hair splitting. We certainly do know that some patients get into the habit of the almost endless repetition of the expression of their mental content.

Dementia praecox is the locus of more habits perhaps than any other psychosis shows. Some are as purely "motor" as one could wish and others "mental". Catatonia may become a fixed motor habit undoubtedly, although seldom. It seems more scientific to think of it as a voluntary posture "movement" on a basis of motor idea, but this certainly habituated. The protean habits of the praecoxes are beyond computation "too numerous to mention".

The *therapeutics* of overhabituation in the sane or in the mentally deranged comprises itself in the process I have called elsewhere at some length habit-bending or habit-replacement or, in some habits, the more familiar habit-breaking; which one of these or which of them in combination depends wholly on the particular circumstances of the case considered. Certain is it that few badly fixed motor habits should be broken off short, and only rarely is it that habits of thought can be so broken off, although this breaking-off is of course the ideal of all psychotherapeutics including psychoanalysis. The deranged mind gives us its obsessions and delusions far less readily than the mind that is normal. What sincere psychoanalyst pretends to either cure the unintelligent, the dilapidated, or the deeply psychotic? These groups relatively lack the immense personal oversight of themselves which in normal people often begins in rational and logical persuasion.

Normal folk sometimes get tired of the monotony of an habitually repeated action or experience and break the habit just for variety's sake, and find that the change or the cessation gives them much satisfaction. But as part of their inferior personal control, deranged persons do not do this, becoming thus more and more the victims of their own mechanization. This adds still more to the difficulty of dehabitizing them, so to say. Their frequent

affective flattening lessens their sensitivity to ennui and boredom, and removes still another incentive to normalize themselves.

The first step in loosening the clutch of the narrow and excessive overmechanization, by hook or by crook, by psychotherapeutics or psychoanalysis or merely by common-sense explanation and advice (as the case demands), is to make the victim, the patient, *realize* his bad habits of mind and body. The other "steps" combine into an elaborate system of replacing step by step the psychoneurotic or the psychotic habits with other habits closer to normality and based on social instead of anti-social interests and endeavors. Seemingly there is no shorter road! I am not offering any absurd panacea, or a new method, even, for normalizing the anti-social behavior of the mentally deranged. We are merely suggesting certain more or less *ex tempore* considerations in one psychological aspect of that future desirable consummation —and that aspect is habituation.

Habituation fortunately is not a poor rule that works only one way and so the irresistibility of habit-formation by mere repetition that so largely determines "bad" habits, works almost as strongly in their bending as in their replacing with better ones—and this goes on, this facilitation, one might say in geometrical progression. One circumstance lessens the case of good-habit-formation, however. This is a bit of life-cynicism of the utmost biological importance, namely that most "bad" habits are more enjoyable than most good habits. The ethical and biological complications here, however, are most forbidding! Let us escape them, and certain logical difficulties with them.

As we all learned in the first week or two of our experience with the insane, you can't (however terrible your power and your authority) stop a charming young matron from tearing to bits her highly and dearly valued clothes by arguing with her. Such inner-motivated habits have to be checked from within or else from without by brute force. I am sure that this sort of psychotic habit usually is due to more or less continuous delusional motivation, so that it is the ideational process rather than the motor process that is overhabituated. Such associational trends are usually beyond our control except by methods unconnected with direct habit-replacement—by psychoanalysis and other psychotherapeutics especially. But the conditions in the psychoneuroses are different in degree at any rate, perhaps in kind. Here the mental process is more accessible usually and the principles of habit-bending nearer to those that succeed with normal children who are the victims of disadvantageous habituation. The hysterics, the

psychasthenics, the neurasthenics, and the anxiety neurotics are in essential respects, besides this one, more or less childlike, as has so often been observed.

Of the nine principles of habit-bending that elsewhere I have suggested for habit-bending in children, six apply to psychoneurotics at least: 1. Self-interested protection is to be made the guiding rule. 2. Replace a bad habit by some harmless and, if possible, pleasant substitute. 3. Bend only one habit at a time. 4. Continual and explicit encouragement as to ability, progress, certainty of success, etc. 5. Stress the strengthening of one's human personality by complete self-control. 6. Develop the ease and the chances of success by the hygienic invigorating of the action-system by outdoor exercise (preferably some such work as gardening), sleep aplenty, abundant plain food, a high stheneuphoric index, etc., etc. And human personal morale is an enormous influence for efficiency in all human relationships. Its importance is often underestimated in efficiency-seeking. These six or seven principles of habit-psychology might advantageously guide all germane hospital treatment of the deranged, as well.

It is, not unnaturally, the negative and negativistic "habits" of psychotic and of psychoneurotic behavior that are the hardest to bend and to replace,—notably the negative habit of not eating, and that of mutism. But in these the likelihood is that they too are not strongly fixed habits properly so called, but rather for the most part deliberate voluntary reactions to conscious delusions, frequently on a basis of hallucination. Often indeed these may be not habits at all.

A person's habituations, fixations of thought and of behavior, are in a sense and in some degree his reaction to his spiritual and material environment. One way open to the normal overhabitized person, desirous of getting out of his tiring ruts of living, is to change his environment. And many are the men and women who have found the procedure effective. This principle should be neither ignored nor neglected in bending or breaking the fixations of the deranged. In practice of course, it means the expedient maximum of entertainments, excursions, and the like. But it means also grounds- and town-parole for every case if and as soon as this liberty is advisable. It indicates parole home as often as may be, and in cases where it is suitable enough guarded travel to take them out of their overhabituated selves. Emerson's dictum that traveling may be at times a fool's paradise because one's thoughts and troubles mostly travel with them, in no logical

sense militates against the need of the overhabituated to frequent change of scene and of effective environment.

One of my patients recently suggested to me that actual instruction in the matter of habit-bending and of self-control would be of much use to some deranged patients who were overhabituated. This patient is a man of superior intelligence and education above the average, and he therefore undoubtedly exaggerates in his mind the general receptive availability, so to say, of instruction and education for the deranged. But none the less, one never can tell until it is actually tried out on a definite patient how little or how much he will profit by careful and repeated presentation of the gist of the psychology and of the physiology underlying the releasing of one's self from habit-fixations. Among the insane as among those classed as "normal", the universal principle and habit of self-preservation may be depended on to control the motives and the efforts of the individual—unless otherwise (as in depression) negatived. The majority will continue to do for themselves as well as they know how to do,—a principle too often ignored in life. Education one day in the wise by and by is going to save mankind from himself,! always his own worst enemy.

The Physiological Method: Edouard Seguin (born in France but formerly Director of the W. E. Fernald School for the Feeble Minded in Massachusetts) was the applier if not the deviser of the Physiological Method, but then in regard to the mentally defective, not to the psychotic and the neurotic. It strives to develop new abilities in the patient's organism by the actual education or reëducation of the motor behavior-patterns, not trusting (as does psychotherapeutics) to altering the individual's behavior through his ideas, intentions, or conscious motives. One may stress that it trusts to the patient's *motor* ideas rather than to his ideas. It strives by developing his motor ideas and by supplying new ones to develop new interests through new motor facilities—and new facilities through new interests, for these mutually interact. Let me quote again from the fourth of the series of articles on habit and habit-bending reprinted in *Mind and Body,* (Jan., 1919), from *The Mother's Magazine:* As an illustration of a habit (to be bent) with a least number of mental elements concerned in it, let us suppose that a boy of ten one night finds himself unable to go to sleep, or to compose himself for sleep even, unless he have his arms, or sometimes when he is very tired only one arm, under his head or lying stretched out above it on the pillow. Being an intelligent boy, already interested in his "internal workin's" physical and mental, just for the fun of the thing and to prove

that he's the master of his own arms and his own sleep, he sets out to overcome this almost purely static postural motor habit. In the first place, he is vastly surprised to find that it *was* a habit—"he had never noticed that he *had* to do it", not indeed until he began to try to show himself that he didn't have to. Even after his arms had taken their habitual position, he found it perfectly possible, but actually not quite easy, to place his arms along his sides. But what actually amazed Master Bender, was that in about ten seconds or even less, this not-accustomed position of his arms, although in every anatomic respect perfectly natural, became positively unpleasant, so much so, indeed almost painful, that he always was strongly impelled to put his arms back over his head. And those nights when he did so "for the experiment", he knew nothing more, for he went immediately to sleep, to awaken in the morning not a little chagrined that for still another night this absurd little harmless habit "kept ahead of him", and prevented him from being even a real "captain" even of his own arms!

But nearly every night this real personality of a boy made an effort to overcome this habit by deliberately placing his arms at his sides although perhaps as often as not meanwhile he went to sleep with them under his head. In about three weeks, however, of effort only at sleep-time, the unpleasantness of having them elsewhere gradually passed away. Two or three years forming, twenty or so intelligent efforts in as many nights were sufficient in his case to take away from the new muscle-joint (kinesthetic) sensations that actual and at first acute unpleasantness which prevented them from permitting the arm-postures they represented. The question as to just what gives these new unhabitual sensations their acute disagreeableness is a pretty question for psychology to answer; especially since the "new" posture gives no unpleasantness save in the relation to the handing of this habit, not during the day. The writer's Leipsig-article on kinesthesia seems to furnish the key to the lock: *the restraining nerve-action is inherently unpleasant and in the cerebral presence of potential pleasant sensations that are denied reality, becomes so disagreeable as to be only with much difficulty and effort maintained.* I believe this to be the psychologic secret of the extraordinary persistance and fixity of some motor habits.

The Bender boy found that the oncoming of sleep at first was the signal for the arms, gradually or more often suddenly, to go up into their long-accustomed position. He found too that any

kind of excitement (such as the fire in his school and its tragic results, or the playing of the deciding game in the baseball season the next afternoon), acted just as did sleep coming on to drive out of even his earnest and persistent mind his fine restraining intentions. It was also a very instructive point to our curiosity-impelled boy that the parts of the body such as the limbs (both legs and arms), so very readily grow, as it will, into fixed tendencies to pose. He found it much like a mass of liquid pure rubber hardened in a mold: easily altered in form, but always quick to return when allowed to do so to the molded shape. We must add in this connection that such tendencies to "set" in a motor sense must be at the bodily basis of all habits whatsoever, only that in the so-called general habits the basis is less easy to define.

Now let us summarize in a few words our newly acquired facts about the pure psychology of habit-bending and then go on to the more practical side of this important process: The bending out of an old mechanized motor habit involves, each time the bending is tried, not only a loss of the pleasantness that comes from making the action (or keeping the posture) in the habitual way, but it involves at the same time the more or less effortful and unpleasant substitution of some other action (or posture) which should be more pleasant than that restrained. After a few controls, however, the replacing action begins to consciously gain in pleasantness as it too becomes habitual, and so more and more to compete with the prescribed habitual movement. With a strong will behind it the competing new action is sure to win the struggle and that too regardless of pleasantness or its contrary. If we substitute for the habit-movements already easy and perhaps pleasant, this supremacy must come all the sooner especially in very young children in whom the will to persist as a voluntary effort is relatively weak.

The physiological method, however, obviously is much more than a matter of mere physiology,—it involves the coöperation and the developmental interests of the entire personality more or less. Not only the kinesthetic sensations are made more conscious and thereby the individual made more a master of his body, but interest in new lines of behavior is developed and the patient's contact with his environment is broadened and vitalized. Whether technically schizoid or not, the patient with many fixed habits in his action-system which ought to be relatively deliberate and voluntary and free is narrowed *pro tanto* by this mechanization. To relieve him of this limitation by replacing bad habits by better ones

or by breaking them up, altogether scrapping them, is to normalize him in a fundamental way. Examples are the phobias of psychasthenia and the worries of many forms of mental derangement —both of these getting their force and their persistence largely from habituation. The entire psychophysical organism is an *unity* to a degree which even yet only a few realize. And no one on earth, I am sure, realizes this in anywhere near its actual perfection of integration, through the ten thousand million neurones, thousands of arterioles and of lymphatics, and the other less important integrators of the organism, suffused everywhere with what we term mind and life. The unfixing of a fixation in an individual exerts its influence far more widely than might be supposed by one lacking the above considerations as to integration.

Occupation means of necessity the doing of some specific behavior outside the harmful fixations to be removed and therefore it extends the efficiency of the individual's action-system and makes it at the same time more easily interested away from its disadvantageous action-patterns.

One need not stay one's haste to suggest to this body of psychiatrists that in offering notes on the therapeutics of habit we are to be dealing with *nothing less and with little more than a better developed, intensive, adapted, advanced grade of occupational therapy.* This art has certainly not as yet done its self or its opportunities any fair degree of justice,—or so it seems to me. I can see an occupational therapy of the future that will be as therapeutically efficient when compared with its present efficiency as 1930 medicine is efficient compared with that of 1830, perhaps even 1630. Like manual training and physical training, occupational therapy has not yet begun to apply modern physiological psychology to its efficiency. The famous Gilbreth started motion-study and in some respects there through the method of the future. But the therapeutics of the matter has scarcely as yet begun. Its method so far has not advanced beyond the blunderbus stage of shooting down bad habituations. Most of the special and particular applications to the details of habit-bending and behavior-reform and cure remain to be developed—the modern rifle bullets (to complete our metaphor) of modern psychology. Nothing much can possibly be accomplished, relatively speaking, until the old hit-or-miss early stage of occupational therapy is outgrown. Already our best, almost our only, hope of curing some of the psychoses, its *potential* powers seem most encouraging for the future, in both prophylaxis and cure.

In a brief critique of occupational therapy from the point of view of psychology—and who can gainsay that this is the only

scientific place from which to view it, rather than from the traditional, relatively empiric place?—it appears first that like manual training, etc., it should make more use of the subjective motor sensations than now is done. Where would one find an instructor in manual training, in occupational therapy, or in almost any branch of motor training whose students know aught of the muscles and nerves employed or of the kinesthetic sensations through which all the marvelous mechanism of the body does its finely adjusting work? And yet herein undoubtedly lies the best chance for improvement in motor skills of every kind. Occupational therapy, in common with other manual arts, has much to learn in this fundamental respect.

One hears in these arts much about tools and implements and instruments (especially musical), but the really essential because basal tools are the muscles, nerves (and glands to a far less extent) within the body that each student must learn to control with all the perfection that is built into his particular action-system. Habits of "perfect" skill otherwise are unthinkable.

But so far as habituation is concerned in the grosser-habits sense used mostly in these notes, occupational therapy has much to teach itself in the future before it can do its real best in curing mental derangements. Occupation of one's mind to crowd out apprehension, worry, and anxiety and so to give the affective mind rest and recuperation, is only part of its privilege. I for one can imagine an occupational system of therapy that will take one after the other the psychoneurotic and some at least of the psychotic motor habits of an individual and bend and loosen them, and replace them with others less disadvantageous.

Some habits, most commonly those closest to the pleasurable instinctive ground of animal life, can not be removed either by replacement or by bending from the psychotic's life. But numerous other habits, frequently some that are of essential import in the mental derangement of the case, will be removed with relative ease. These removals break up a psychoneurosis and often a well-defined psychosis just as certainly as the blasting out of "key" logs in an old-time spring jam in the upper Kennebec River of Maine allowed the current of the river to move along again its burden of timber to the mills. It took an experienced man to pick out these key logs; it takes an experienced and a thoughtful psychiatrist to prescribe the treatment by "occupation" and habit-bending that would be the best for each case under his charge. But the method can set no present limits to its curative usefulness! Let the future judge.

Habits of thought and of feeling are in less different case than the consistent dualist (if a dualist can be consistent, which seems unlikely) would suppose. As already I have suggested, there is no such thing properly speaking as a mental habit. But even if there were, their formation and also their undoing would follow the same "laws" as habits frankly motor. The right occupation can get a man to stop thinking along certain lines and can normalize his behavior so that his former thoughts will seem incongruous to his reformed nature.

And for that matter, psychotherapeutics is a form of occupational therapy in a broad usage of the term, provided there be provision for coöperation and reaction on the part of the patient somewhat such as is carried to a much elongated excess in much of contemporary psychoanalysis.

REFERENCES

James, William. Principles of Psychology, 1890, Chapter IV.
Kempf, E. J. The Autonomic Functions and the Personality. Nervous and Mental Disease Monograph. 1918.
Seguin, Edouard. Hygiene et education des idiots. Paris, 1843. New edition in English, N. Y. C., 1866.
Lindley, E. H. Am. Jour. Psychol., VII, 4, 1895.
Gilbreth, F. B. Motion Study, 1911. N. Y. C.
Heilbronner, K. Ueber gewöhnung auf normalen und pathologischen gebiete. In Grenzen fragen der nerven und seelenlebens, No. 87, Wisbaden, 1912.
Atwood, C. E. The Treatment of Habits. Med. Record (N. Y.), July 27, 1912.
Joel, E. Zur Pathologie der gewöhnung. In Der therapie der gegenwart, Nov., Dec., 1923.
Scheffel, C. The Treatment of Mental Aberrations and Undesirable Habit-formations by Psychotherapeutic Methods. Med. Record (N. Y.), Dec. 7, 1921.
Wilson, S. C. Habit-Training for Mental Cases. Occup. Therap. and Rehab., 8 (1929), 189–198.
Taylor, E. W. Types of Habit Neuropsychoses, 1898, Boston.
Dearborn, G. V. N. The Relation of Muscular Activity to the Mental Process. Amer. Physical Educ. Rev., XIV, 1 (Jan., 1909), 10–16. Reprinted in Sci. Amer. Suppl., LXXXII, 2126 (Sept. 30, 1916).
Ibid. Notes on the Neurology of Voluntary Movement. Med. Record (N. Y.), 81, 20 (May 18, 1912), 927–939.
Ibid. A Contribution to the Physiology of Kinesthesia. Jour. für Psychol. und Neurol., XX, and 2, 62–73, illustrated. Proc. Amer. Psychol., Washington.
Ibid. Kinesthesia and the Intelligent Will. Amer. Jour. Psychol., XXIV, 2 (April, 1913), Illustrated, 204–255.
Ibid. Kinesthesia. Ref. Handbook Med. Sci., (Wood), V, 760–762.
Ibid. Habit and Malocclusion. Med. Record, N. Y., 88, 18 (2347, Oct. 3, 1915), 727–732. International Jour. Orthodontia, 1, 12 (Dec., 1915), 636–641. Literary Digest, 51, 25 (Dec. 18, 1915), 1425–1426.
Ibid. Movement, Cenesthesia, and the Mind. Psychol. Rev., XXIII, 3 (May, 1916), 190–207.
Ibid. Orthodontic Habit-Culture at Home. International Jour. Orthodontia, III, 5 (May, 1917), 284–293.
Ibid. Habit-Bending. Educational Standards, I (Feb., 1916), 3–4.
Ibid. Habit. Mothers' Mag., XII, 4 (April, 1917), 317.
Ibid. Formation of Habits. Mothers' Mag., XII, 5 (May, 1917).
Ibid. Prevention of Bad Habits. Mothers' Mag., XII, 6 (June, 1917).
Ibid. Habit Bending. Mothers' Mag., XII, 7 (July, 1917). (For these four see also Mind and Body, Oct., Nov., and Dec., 1918, and Jan., 1919.

ANNOYING HABITS OF COLLEGE PROFESSORS

By JOE E. MOORE
NORTH CAROLINA STATE COLLEGE

THIS study attempts to show some habits and mannerisms of college professors which annoy students. A survey of the habits and mannerisms of 112 different teachers at North Carolina State College as observed by 123 different students was made. The classification of the students was as follows: fifty-three freshmen, thirty sophomores, twenty-two juniors, and eighteen seniors.

The subjects used in this study were elementary psychology students. They were given very careful instructions not to list any habit of a professor that did not annoy them personally. Each student was asked to study his professors for two weeks and make a report on those that had annoying habits. The students were urged to keep as objective an attitude as possible. Assurance was given that no student's report would reach the professors under observation. After explaining what was wanted of each student, the instructor gave out the following list.

1. Procedure: Make careful observation of each one of your teachers for any *mannerisms* or habits that annoy you.
2. Suggestions for classification of data:

Mannerisms or Habits Such As:

A. *Facial*
   1. Cocking head
   2. Frowning
   3. Twisting mouth

B. *Language*
   1. Articulation
   2. Pauses
   3. Pet expressions
   4. Pronunciation
   5. Talking too low

C. *Posture*
   1. Carriage of body
   2. Sitting slouched
   3. Standing in awkward position
   4. Sticking hands in pocket

D. *Movements of Limbs*
   1. Twiddling fingers
   2. Pulling ears or nose
   3. Scratching head
   4. Tickering with watch

E. *Attention*
   1. Not looking at class
   2. Rambling in lectures
   3. Statements not complete

F. *Dress*
   1. Lack of neatness
   2. Odd color combinations
   3. Peculiar styles in clothing

G. *Personal Appearance*
   1. Unshaved
   2. Hair unkempt
   3. Nails soiled, etc.

3. Writing up one's data:
   A. List each professor by name.
   B. List the course and hour of class.
   C. Be critical but be fair in your reporting.
   D. See that your data on each professor is complete.

Care was taken to make it clear that the list was wholly of a suggestive nature, and that the students might add to it as much as necessary. The fact that 63 additional habits were listed shows that the students considered the suggestive list incomplete.

The following table shows the 25 most frequently mentioned annoying habits and the number of times each was listed.

TABLE I

ANNOYING HABIT OR MANNERISM OF PROFESSORS—FREQUENCY

1. Rambling in lectures	76
2. Twisting mouth into odd shapes	63
3. Frowning	55
4. Playing or tinkering with objects	51
5. Cocking head	50
6. Pulling ear, nose, or lips	45
7. Sticking hands into pockets	44
8. Standing in an awkward position	42
9. Pausing too long in talking	41
10. Use of pet expressions	39
11. Scratching head	39
12. Not looking at class	37
13. Lacking neatness	33
14. Talking too low	31
15. Using sarcasm	29
16. Walking about too much	29
17. "Wise cracking"	26
18. Talking too fast	26
19. Faulty pronunciation	22
20. Sitting slouched down in chair	21
21. Hair unkempt	18
22. Nervous movements	18
23. Odd color combinations in clothing	17
24. Making incomplete statements	16
25. "Riding students"	14

The clear indication of how important facial expressions are in lecturing can be seen from the frequency table presented above. Any facial expression that varies ever so little from the average seems to annoy the students studied in this group.

The ease with which students are attracted by gestures can be seen in the fourth and most annoying habit in Table I, namely, the playing with various kinds of objects. The teacher who fingers chalk, twirls a watch chain, takes off and replaces his glasses can be reasonably sure his movements will be closely observed.

The pet expressions of some college teachers become so obvious and annoying that some students amused themselves by

making small wagers on how often a certain professor will use his pet expression during an hour lecture. One industrious student kept a record of how often one professor used his pet expression during a two week period, and found that it had occurred more than two hundred times.

The pet expressions reported in this study follow:

Pet Expressions

"Follow me?" "You know."
"You all boys."
"Yea that's right."
"Ain't that right pal?"
"Very valuable information."
"See, git that."
"I was raised on a farm."
"Time is fleeting."
"I'm going to jump around your neck."
"Between the devil and the deep blue sea."
"What a man!"
"Take your choice."
"Pardon me, class, may I say damn?"
"After all is said and done."
"Well, gentlemen."
"Ain't that wonderful?"
"You know?"
"Huh."
"That's all right, that's all right."
"If you please, gentlemen."
"That's the meat of the cocoanut."
"That hadn't ought to be hard."
"Take the assumption."
"Interestingly enough."
"Ain't that right?"
"Wheels." "Dugan." "O. K."
"Speck" used for expect.
"Anything on your mind?"
"Like an old mule."
"In the final analysis."
"On this thing."
"Well."
"Ah, la!"
"Yes suh! Yes suh!"
"Yes, I'll fix you right up."
"By an' large."
"See?"
"What not."
"I have to look into that."
"Now watch me, I'm going to trip you."
"Ah-h-h."
"Got it?" "Uh! uh! uh!"

An analysis of the pet expressions reported in this study would indicate a desire on the part of the professor to impress the students with an expressive word or phrase. The value of pet expressions is questionable, but the facts in this study show that many professors are known and called by their pet expressions. In many cases it may be that the offending expressions have become so habitual as to pass unnoticed by the teacher.

To find such obvious annoying habits in one or two college professors is not surprising, but when one finds numerous annoying habits in a large per cent of a college faculty one can realize the great distracting power those little habits have.

The fact that college professors are among the most independent and less supervised groups of men in any of the professions may account for the lack of or effectiveness of critical self-analysis. The professors may tend to get into ruts in their

teaching and develop habits that annoy their students without realizing the nature of their habits.

SUMMARY

1. The most annoying habit reported in this study is that of the professor rambling in his lectures.

2. The students seem to fixate their gaze upon the face of their professor judging from the reported frequencies of this annoying habit.

3. The movements of a professor's hands during a lecture seem to be observed carefully by the students who form the basis of this study.

4. The pet expressions of teachers are of very questionable value in college teaching judging from the extent they annoy students.

5. The college professor might possibly improve his teaching if he were more aware of some of his most annoying habits.

THE SELF IN THE LIGHT OF GESTALT PSYCHOLOGY *

By CHARLES C. JOSEY
PROFESSOR OF PSYCHOLOGY, UNIVERSITY OF SO. DAKOTA

THERE are in general three ways of viewing behavior. One stresses the importance of the stimulus; another, the self; and the third the whole situation which gives rise to the act. The first is popularly known as stimulus-response psychology, and is mechanistic in tone. The second is an organismic and purposive view of behavior. It is sometimes called hormic psychology. The third position, stressed by Gestalt psychology, can best be understood by a consideration of the weaknesses of the other two.

The stimulus-response psychology is weak in two respects. First, it treats the self as passive until aroused to action by some activating condition. According to it, the self is like a "model T" Ford waiting to be cranked. And secondly, it does not explain what makes a stimulus a stimulus. A given object, say one's phone, may long be ignored; suddenly it is responded to. Why it becomes a stimulus, the stimulus-response psychology cannot explain. Hormic psychology finds no difficulty in doing so or in accounting for activity. It regards the organism as innately active, and sets for itself the task of understanding why it acts as it does. Objects, it holds, become stimuli when they are in line with the needs or desires of the organism. This view, however, does not give a satisfactory account of the rise of needs or desires of the self. Instead it seems to regard them as rising in Leibnitzean fashion purely spontaneously, unaffected by conditions outside of the self. In stressing the importance of the self, it neglects the environment.

Gestalt psychology seeks to combine the part truths of the mechanistic and the hormic views of behavior into a more comprehensive one. The stimulus (environment) is important; so is the self; for behavior is related to both. It is an outgrowth of a set of conditions, the psychological whole, of which the self and environment are parts. Desires, emotions, and activities of all kinds are outgrowths of the whole, in much the same way that pressure is an outgrowth of the whole situation one-body-bearing-

* Received and acknowledged May 15, 1934.

down-on-another. For example, the wish of a boy on seeing a ladder to climb, should not be regarded as something that spontaneously came into consciousness independent of the ladder; nor should it be regarded as a force set off by the ladder. Rather boy-in-presence-of-ladder gives rise to the desire to climb. Nothing short of the whole situation can account for the desire. Similarly out of the whole situation, Sleeping Beauty awakened-by-the-kiss-of-the-Prince love was created. It was not awakened or released; it was *created.* In the same way thought and other mental processes are created. The task of psychologists is to describe the conditions which give rise to activities, attitudes, and character traits.

Gestalt psychologists have rightly stressed the necessity of interpreting behavior in terms of the whole situation that gives rise to it. In their account of behavior, however, they have not given sufficient content to the self; which after all is an important part of the psychological situation. Unless the self is so endowed how can the stresses and strains that arise in the psychological whole be accounted for? Place a man and an ape in the same environment, the psychological whole will obviously be different. Moreover the psychological whole varies with individual men. The psychological situation created when an artist is in an art gallery is different from the one created when a person devoid of artistic feelings is there.

Such considerations point to the need of a more thorough study of the nature and variables of a self than the gestalt psychologists have made. That behavior is an outgrowth of all the conditions that give rise to it, and must be explained in these terms, is a valuable guiding principle. But when we wish to know why a person performed a given act, or why two people in the same objective situation acted differently, we must look for the variables in the individual. The gestalt psychologists as scientists therefore need to supplement their broad generalization of behavior, excellent though it is, with a more detailed picture of the contents of the psychological whole. There are, however, some points that must be cleared up before this can be safely done.

. . . . . .

As scientists we naturally divide the psychological whole into the self and environment. We then point out the various features of the self and of the environment that are important for understanding behavior, and attempt to evaluate the importance of each feature in producing a given character or act. Necessary though

this may be for the scientific study of behavior we need to recognize that when we do this we are dealing with abstractions which cannot exist apart from the whole situation. The tendency to make sharper distinctions and divisions than a more thorough examination justifies must be carefully watched.

Even at the physical level the boundary line between the self and environment cannot be as sharply drawn as we are in the habit of believing. When for example, does the food that is being digested, or the air that is being breathed cease being a part of environment and become a part of the self? As it is hard to draw a hard and fast line between the water of a vortex and that outside of it, so is it hard to draw such a line between the functional system we call the self and the larger functional system of which it is a part. This is equally true at the mental level. When, for example, does a new idea that we are assimilating cease being a part of the environment and become a part of us? A new loyalty may stir the emotions of an individual and in time become the guiding principle of his life. At what time does that loyalty become a part of him? A person reading a novel is carried away, we say, to a world of romance. Is the world of romance a part of him or of his environment? Perhaps a person without the aid of a novel allows his fancy to run wild, and he creates a world of make-believe. We say he is living in a world of dreams. Is the world of dreams a part of him or a part of his environment?

Additional difficulty of dividing the psychological whole into the self and environment arises from the fact that it contains more than the self and environment. In addition it contains relations and qualities which emerge as a result of relations, many of which contribute much to the nature of the self. This can best be shown by asking what becomes of certain things when the psychological whole is broken into the self and environment. For example, consider novelty, which as a determinant of attention, functions in the psychological whole. To what does it belong? Clearly it is not a characteristic of the one attending. It is equally clear that it cannot belong to the nature of the object attended to, for the object may be novel to one person and commonplace to another. The same is true of prestige, commonly regarded as a determinant of suggestibility. Prestige does not belong to the source of the suggestion for the same reason novelty does not belong to the object attended to. It is rather the attitude of the person accepting the suggestion to the one making it.

Novelty and prestige we are in the habit of regarding as being in some way relations, but qualities which we are more inclined

to regard as belonging to the self upon analysis are also seen to belong to the larger whole. Weight, for example, is such a quality. The pull of bodies on each other gives rise to weight. Without that relation no object could have weight. Weight, then, is a quality that emerges from the total situation. Complexion emerges similarly. As soon as the reality of emergent qualities is admitted, we begin to sense the functional unity of the larger whole of which the self is a part, and the interpenetration of the self and environment.

A description of a person will make this doubly clear. A given man may be a son, a parent, a teacher, a leader, wealthy and popular. Clearly these are relations that can arise only in a larger whole, and yet they make up in no small way the nature of the self. The same may be said of mental traits that are commonly regarded as belonging more truly to the self, such as loyalty, emulation, rivalry, mastery, and acquisitiveness. Only in a larger whole can such character traits arise, yet they too are important elements of a self. Physicists have accustomed us to the thought that matter extends wherever its influence is felt, and therefore to its interpenetration. Is the interpenetration of selves less real? The demand for the practical leads us to seek discrete objects; logic warns against taking such discreteness too seriously.

What is left of self after we abstract from it the emergent qualities which are due to relations? That it must have some nature we are compelled to believe when we note the differences between the self and a stone or even between the self and an ape. What is it? Perhaps we may regard the self as a thinking thing or more broadly as a functional unit, and conceive of its activities as making up its nature. To conceive of activity as determining the nature of the object is thoroughly sound. But what is the source of its activity and what directs it?

Some in the effort to explain mental activity mythologize the function of the brain by regarding it as composed of a number of guiding genii. Many who avoid this mistake insist that the self as a whole directs behavior. They rightly point to the brain as an instrument of the self. But those who hold this position are only one step removed from those who mythologize the brain. They should go a step further. Activity is due to all of the conditions that have given rise to it, and so is its direction. This may be seen even at the level of reflex action. Under some circumstances the sting of the wasp may lead to a violent relaxation of one's grip; under other conditions it may lead to grasping more firmly

the object being held. At higher mental levels behavior is as truly determined by the whole setting. For example, in a discussion group, the thoughts of each are determined by the nature of the problem under discussion and the play of personality on personality in the social setting, as well as by the background and interests of each. It would therefore be truer to say that the group thinks through each individual than to say that the brain thinks or even that the individual as a whole thinks.

Since the activity of anything determines its nature and since the activity of a self is determined by the larger whole of which it is a part, it follows that the nature of the self is determined by the whole. Hence the view that the self is an activity center far from providing content to an independent self makes it a product of the larger whole. In the light of this analysis the self appears very much like "the somewhat" in the copper wire which under some conditions gives rise to light, and under other conditions to heat, and under yet other conditions to power. But what it is in itself we cannot further describe. Likewise of the self can we say more than that it is "a somewhat" which under certain conditions gives rise to love and hate, perceiving, enjoying, and thinking? Perhaps, however, the self may be regarded as a potential thinker, lover, or perceiver.

What does it mean for one thing to be potentially something else? We say the acorn is potentially an oak. What does this mean, but that the acorn plus proper conditions will give rise to an oak? The acorn assimilates various elements from the soil, water, and air, and it fixates the energy of the sun and builds these into an oak. By what right do we say the oak was potentially contained in the acorn? Could we not with equal justice say that the oak was potentially contained in the soil, air, and sunshine? And is not this what a farmer would say as he considers buying a tract of land? Under definable conditions the food and sunshine and acorn became an oak. Likewise if thought, perceiving, and other mental activities arise under certain conditions, and these conditions are necessary for the activity, by what right do we single out the self and endow it with such potentialities. With equal truth we may say the act was potentially contained in the problem, the social situation, and the other features or parts of the whole which gave rise to it.

The self of course plays an important and unique rôle in all mental processes. An analogy may help to make its rôle clear. A magnet we say creates a magnetic field, such that when a measuring stick is placed within it a pull is created which is measured

in terms of dynes. When other steel bodies are placed in the magnetic field, a magnetic pull is created, though it may not be measured. It is easy to see that the magnet occupies a position of central importance in such phenomena. It has a definite orbit of influence and things that come within it are affected. It is equally clear, however, that the phenomena that occur are equally dependent on the other objects coming within its sphere of influence. So the self may be regarded as creating a sort of psychological field, though nothing will occur in that field unless other things are brought within it. It should also be remembered that the magnet is influenced by the other object. The self is perhaps even more influenced by objects that come within its field.

Let us pursue the thought of potentiality a bit further. We say the child potentially contains the man. It would be truer to say the child is an assimilative organism. He assimilates not only at the physical level; he assimilates also the attitudes and values of those about him, and these become the very stuff of his personality. Are we more warranted in saying that the child potentially contains the man, than that the food, air, and sunshine, the social institutions and the attitudes of his group, and the beauty of the world about him potentially contain the man? These things are in some way absorbed or assimilated and a man results. All entered into the product.

In speaking of the self as an assimilating organism, we have probably suggested that it is more autonomous and independent than we intended. We need therefore to face more directly the question, what assimilates? Is it a mass of protoplasm having weight and structure? Weight, as we have seen, is an emergent quality. As for the structure of an organism, it is determined in no small degree by its activity as can be seen by the effect of carrying the arm in a sling, and more strikingly yet in the effect of death on the structure of the body. Since activity as we have already seen is an emergent of the psychological whole, it follows that structure is largely determined by the whole. Is the thing that assimilates a mind? We mean by mind one of two things. Either it is a convenient term to designate mental activities such as thinking, willing, and believing, or else it is the basis of such activity. Only the latter possibility is of interest in this connection. But the basis of all activity, mental or otherwise, is the larger whole in which it occurs. Moreover there can be no assimilation without something being assimilated. We may, if we wish, focus attention upon only one member of that relation,

but the neglected one is equally necessary. To say, therefore, that the self is an assimilative system is the same as saying that the larger whole converges into a self.

. . . . . .

This position has long been entertained by philosophers. The self is a seat of consciousness and a channel of self-expression of the cosmos. As our arms and legs and the corpuscles of our blood are outgrowths of the developing organism so organisms are outgrowths of the cosmos. The levels of beings are so many revelations of the nature of the cosmos. How or why this process of differentiation occurs, we do not know. That it has been a slow and orderly process extending through millions of years we are assured by our best authorities. This, however, does not make the process of the cosmos organizing itself into selves any less mysterious logically viewed than it would be were living forms to arise before our eyes out of star dust.

Different generations have been led by different routes to the Absolute. Concern regarding evil has led some there. Others have been led there by a consideration of the meaning of truth. Yet others have been led there by their appreciation of the unity of all things. The foregoing implications of Gestalt psychology make easier traveling the last route through providing us with a fresh view of the unity of all things, and by making more meaningful the concept of the Absolute. These implications set in new relief the problem of man's relation to the cosmos. As activity is an outgrowth of the psychological whole, so man is an outgrowth of the larger whole of which he is a part.

This should not be interpreted as meaning that the self is of no functional or causal significance. When electrons and protons come together and an atom is formed, a new dynamic system arises of tremendous physical importance. When far richer elements of our cosmos and society come together, and a self is created, something of profound significance arises. Its being is rooted in the larger whole; its qualities are such as have reality only in that whole, but nonetheless it profoundly changes the whole, as can be seen by all who will open their eyes to the changes on this planet produced by man.

. . . . . .

What difference does it make to psychology whether the self is regarded as a vortex in a whirling pool from which it is inseparable, or whether it be regarded as an independent and autonomous whole? For one thing it should end the controversy

between those who stress the stimulus and those who stress the organism in their account of behavior. Behavior is not a response to a stimulus, nor is it the spontaneous expression of performed impulses and purposes within us. Behavior is rather the result of stresses and strains in the psychological whole, and these arise because a self, a focus in that whole, is constantly changing in a larger whole that is also changing. Behavior to the outside observer is the process of maintaining equilibrium in a constantly changing situation; to the agent it appears as a process of attaining one's goals or purposes.

Moreover to regard the self as an assimilative system that feeds and grows upon its experiences, which in turn are determined by the whole of which it is a part, makes intelligible the effect of environment on the formation of character and personality. When we further recognize that within the psychological field created by the self certain things are more important than others, we understand the tremendous influence of the home, school and community in moulding character.

This view also throws new light on rationalization. Rationalization is not a conscious or unconscious effort to hide the truth by distorting facts. Such a view implies a mind which would, if left alone, mirror accurately the nature of our world. But mind is not a ready-made entity that calmly surveys its environment; it is a product of all that gives rise to mental life. Important among these are group ideals. From an appreciation of this, arises the greatest task of education, the task of freeing us from the provincialism of a narrow past and especially of our class prejudices.

This view of the self also has implications for religion, sociology and politics. An understanding of some of these will set it in clearer relief. For some it will no doubt tend to deflate the feeling of selfhood. Others, however, will find in it something to enhance the significance of selfhood. A piece of iron on the floor is only a piece of iron, but a piece of iron in a machine becomes a thing of value and of increased significance. The machine works through it. Similarly to be a channel through which the cosmos thinks, feels and acts, adds to the value and to the significance of the self. To extend the bounds of the self so that it becomes of the marrow and bone of society and of the cosmos is a thought that has inspired, and no doubt will continue to inspire a sense of the dignity and value of human life.

This view of the self is significant for religion in another way. Religion *may be based* upon a feeling of kinship between man

and the cosmos, but man has constantly sought to show that this feeling is in harmony with the facts. Accordingly he has constantly sought proof that the universe is in some sense a spiritual system or at least controlled by a spiritual being. Arguments of one generation lose much of their weight in the next. For example, we are not now greatly impressed by the ontological argument for God's existence or by the argument from motion. Religious leaders tell us that each person must find God for himself. This is true whether we mean the rational discovery of God or the mystical experience of enjoying God. The view here set forth gives more meaning to the concept God by forcing us to face more directly the creativeness of our universe and man's relation to it.

Of importance also are the social implications of this theory of behavior. In the first place it stresses the plasticity of human nature. If the reader thinks that this has been sufficiently stressed let him talk with one untrained in sociology and psychology. We need to repeat constantly that human beings do not arrive Minerva-like with a nature fixed once and for all. Our attitudes, values and insight are outgrowths of the conditions to which we have been subjected. We see evidence of this on all sides. A person who in times of peace may be kindly and sympathetic may, in times of war, become filled with hate, and desire nothing so much as the complete destruction of the enemy. A kindly disposed citizen may in a mob become a cruel monster. Or a person, who in times of plenty, may regard property rights as sacred, may in times such as we are now passing through, regard property rights as privileges conferred upon some to exploit others.

A second social implication is that society, not the individual, should be regarded as the true source of behavior. The only reality that the accumulated knowledge, wisdom, traditions, prejudices and institutions can have is their influence on us. To the extent that we are made by such social forces it follows that society must assume more responsibility for making individuals that are fit. It also follows that the individual who is interested in his own development and in the development of others must seek to create conditions which will give rise to the type that is desired.

Good individuals are creatures, as Plato long ago taught, of a just society. Recent developments have compelled us to recognize that human nature is not strong enough to stand the stress and strain of an unjust social order. This is made evident by

the corruption in government, the violation of trust by many financial and industrial leaders, the greed of the masses, the prevalence of crime, and by the rapid increase of mental disorders and suicides. The health of man and his moral development depend upon the improvement of social conditions. Only when these are improved can we expect an improvement in man which will make further improvement of social conditions possible.

. . . . . .

After this excursion into the relation of the self to the larger whole of which it is a part, we return to the neglect of the Gestalt psychologists to make an adequate analysis of the self. Perhaps some may feel that the emphasis we have placed on the interpenetration of the self and environment makes impossible the isolation of the self and therefore an analysis of it. Such a feeling is, however, unwarranted. One thing being an integral part of a larger whole does not prevent us from analyzing the whole. Indeed as soon as we have focused attention upon the larger whole so as to isolate in our thinking a part of that whole the process of analysis has begun. The vortex is a form of water or of some other substance, and as such is inseparable from the whole. Yet we may attend to it, and thereby distinguish it, in our thinking, from the pool. We may then proceed to consider its size, its speed, or the material of which it is composed. Likewise with the self. No matter how integral a part it may be of the larger whole, we may attend to it and to its various features.

As philosophers we may well stress the fact that the roots of a self sink deep into the nature of the cosmos, but as scientists we must seek those things that make a difference, and important among these are individual differences between selves. Only by recognizing this can we hope to make intelligible the behavior of those about us. At the same time the recognition of this should not blind us to the fact that the self as well as all behavior is a product of a larger whole.

A CASE OF SYNESTHESIA: VISUAL-PAIN AND VISUAL-AUDITION *

By GEORGE J. DUDYCHA
RIPON COLLEGE
AND
MARTHA M. DUDYCHA

I. INTRODUCTION

JUDGING from the number of reported cases of synesthesia one would conclude that it is not a very common experience. It is difficult to say how frequent it is, for, without a doubt, there are individuals who have some form of synesthesia, but who have never noted the fact that their experiences are different from those of other individuals. Since they have always experienced colors or forms with tones, or colors with odors, etc., they have never even reflected upon the possibility of experiencing tones without the visual accompaniment. Thus it is only when the person comes in contact with the theories or descriptions of synesthesia, as in a psychology course, that he analyzes his own experiences.

The subject, whose synesthetic experiences are reported here, is a woman who was twenty years old and a college senior at the time of examination. She first discovered that her experiences were different from those of her sister about two or three years before examination, but dismissed the matter since she knew nothing of synesthesia. This incident she reports somewhat as follows: One day, while visiting with her married sister, she said: "There goes another one of those lightnings!" By this she meant that she had just experienced a sharp pain. Since the subject's sister did not understand what was meant by "another lightning," she inquired and in this way the subject first realized that certain of her experiences were different. It was not until she encountered the subject of synesthesia in an advanced psychology course that she came to appreciate her rather unique experiences and reported them to us.

The subject is of superior ability. She has a rather extensive musical education—seven years on the violin and eight years on the piano—and comes from a family of musicians. The subject's

* Received and acknowledged June 7, 1933.

mother was a very talented violin teacher and her sister is an instructor of violin in a college. The subject enjoys classical music, but is more content to listen to it than to render it. Her favorite instrument is the violin.

Two types of synesthesia are experienced by the subject—*visual-pain* and *visual-audition*. The photisms in the case of pain are definite forms each of which has a definite color, with two exceptions, the cramp, and numbness. The photisms which accompany audition are, on the other hand, definite forms which are *never* colored, and thus merely have a certain brightness. In each case, the *form* or *figure* is a very essential part of the photism, and it is this fact which makes the observations interesting. Whenever a particular photism for pain was referred to by the subject, it was always referred to by its characteristic form, as: "lightning", "whirlpool", etc., thus emphasizing the form. Each photism was readily described or drawn by the observer, and at no time did she appear uncertain as to either the form, color or brightness. The writers made a careful check of the subject's observations by questioning her repeatedly and by subjecting her to various experiments, with the result that the subject proved to be absolutely consistent at all times as to the form, color or brightness of each photism. When the color of a photism was described it was always described in the same way, as brownish-purple and never as purplish-brown. Whenever an effort was made to mislead the subject by suggestion, she always resisted the suggestion and insisted upon what she had previously reported. A further reason for assuming that the observer's observations are reliable is the spontaneity and certainty with which she always responded to every question put to her.

II. PHOTISMS WHICH ACCOMPANY PAIN

First we shall consider the visual-pain experiences. The subject has observed eight types of pain with their accompanying photisms. These photisms always appear at the place where the pain is located, and they may continue for a period of time, or appear and disappear in rapid succession, or merely appear and remain for a moment, depending upon the nature of the pain experienced. Each type of pain always gives rise to the same photism with its characteristic form, color or brightness. The eight types of pain with their characteristic photisms follow:

1. *Sharp, Momentary Pain:* When the subject experiences a sharp, momentary pain, she sees a *bright red, needle-like figure* at the place where the pain is localized. The figure is rod-like and has a "bullet-shaped" point at one end. Sometimes, how-

ever, both ends are pointed, but this is the case only when the pains are "shooting pains". The rod-like form varies in length and diameter, its dimensions always being proportional. The short "needles" are one-half an inch long and very thin; the long "needles" may be as long as four inches and about one-eighth of an inch in diameter. The size of the photism varies with the extent of the pain. Once in a while this photism seems to have a "halo effect", that is, it appears lighter around the edge as in the case of a negative after-image.

The photism seems to move in the direction indicated by the point, and "along the line of the cut", for it is most commonly seen in cuts in the flesh. When the subject had her goiter removed, the double-pointed, spindle-like figure was seen and it seemed to "move back and forth in a semi-circle along the cut" or incision. Another interesting observation is that this red needle-like photism seldom points into the wound as in the case of a number of other photisms. This photism is always seen when the subject pricks herself with a pin or needle or cuts herself with a sharp instrument, as a knife.

2. *Sharp, More Prolonged Pain:* The photism seen by the subject when the pain is a sharp and somewhat more prolonged pain than the above is a *thin, jagged line* resembling *lightning,* white or blue in color. There does not seem to be any particular kind of pain which gives rise to a white "lightning" and another kind which causes a blue "lightning", but the blue seems to predominate. The photism is seen as successive lightning-like flashes, each of very brief duration, and invariably having the "halo effect". This halo effect was described as resembling the light area surrounding a negative after-image, or as though a light were shining from behind the figure. When the subject was pinched on the forearm and on the calf of the leg, she saw a "bright blue lightning which was brighter on the edges", and which was seen at the point of stimulation.

3. *Dull, Throbbing Pain:* A dull, throbbing pain is seen as a *large, brownish-purple, globular figure* resembling an *ink blot.* It does not have definite boundaries, but was described as being oval with the longer axis being horizontal. It varies in size and seems to correspond exactly with the affected part. As in the case of a dull, unlocalized stomachache, it is about four and one-half by six and one-half inches. This photism is most usually located in the abdomen and never has the halo effect mentioned above.

4. *Rather Sharp Abdominal Pain:* This photism is called the *whirlpool.* It is *yellowish-orange with a tinge of red,* and

resembles the funnel of a cyclone or a whirlpool in water. The subject not only sees down into the whirl, but also sees the outside of it, so that it appears somewhat as a hollow cone which is whirling around. This whirlpool is two inches deep and three-fourths of an inch in diameter at the large end. As the photism

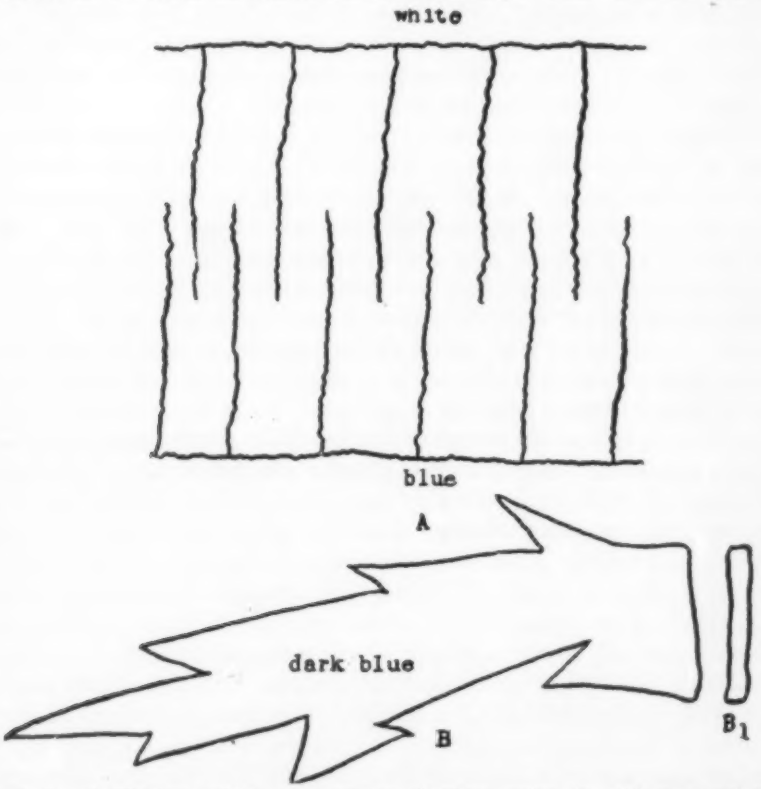

FIGURE I. *A* Photism which accompanies shooting pains in abdomen and back. Figure is one-fourth actual size, *B* Spear-head photism which accompanies a headache. Figure is actual size. B_1 is the thickness of *B*.

whirls around the point seems to "bore down and into the abdomen". It lasts for only a second and has no halo effect. This photism is seen whenever there is a sharp pain anywhere in the abdomen, and accompanies indigestional and especially menstrual pains.

5. *Shooting Pains in Abdomen and Back:* The photisms in this case are similar to the "lightning" described under the second heading. The photism seen when the shooting pains are abdominal is indicated in Figure 1A. All the lines resemble

lightnings. The upper half of the photism is usually white and the lower half usually blue, although the color scheme may be the reverse of this at times. The horizontal lines remain fixed, but the vertical lines do not always remain parallel, but seem to turn from the horizontals into the abdomen as in the case of the lightning described above. This photism is about five by six inches and is located in the abdomen where the pains are localized. This photism was carefully observed for the first time on April 16, 1933, when the subject was awakened by the pain at 5:00 A.M. The photism continued without interruption for five minutes, and until the subject turned over in bed.

When the subject noted this same type of pain in her back between the shoulder blades, only the upper half of the photism was present, that is, the upper horizontal line with the "lightnings" coming down from it. It was white as in the whole photism and the vertical lines were turned in as described above. This photism accompanies the pain which results from being hunched over a study table for a long time.

6. *Cramp Pain:* The cramp is described as a "dull throbbing pain that is closer to an ache than a pain". The photism to which it gives rise is a *gray* figure resembling a *brain* with its numerous convolutions. The brightness of the gray is about that of a human brain, or a little lighter than neutral gray. This photism, like all the others mentioned, is seen at the place where the cramp is localized; but unlike the other photisms, it does not have any color at any time—merely a brightness. When the cramp is abdominal, the photism is about the size of the subject's clenched fist; when it is in the instep, it is about the size of a silver dollar. The cramps in the insteps with their accompanying photisms have been noticed particularly when the subject is swimming. This "brain" photism is seen as long as the cramp lasts and thus is different from the "whirlpool" in this respect.

7. *Numbness:* Numbness is a "white prickly sensation". This is the description which the subject gives to the experience which she has when a member of her body, as a hand or arm, becomes numb or "goes to sleep" as a result of lying upon it. The photism is white (never colored) and closely resembles fizzing soda water. She sees small, white, shiny bubbles which have a definite upward movement.

8. *Headache:* Although the subject has headaches very seldom, she has observed a *dark blue spear-head* photism, about four and one-half by one and one-half inches, that accompanies a sharp pain in the head. The photism is a jagged figure which

comes to a point, which is uniformly dark blue and which has thickness. See Figure 1B which is the exact size and shape of the photism. The subject reports that when she sees the photism it seems to be piercing her forehead, and that it moves back and forth over a distance of about one-fourth of an inch. The last headache which the subject had, when this photism was observed, was probably due to eyestrain.

In Table I we find recorded the eight types of pain with the characteristic color or brightness and form of each photism indicated.

TABLE I

TYPES OF PAIN WITH CHARACTERISTIC PHOTISMS

Pain	Color or Brightness	Form
1. Sharp, momentary	bright red	needle
2. Sharp, more prolonged	white or blue	lightning
3. Dull, throbbing	brownish-purple	ink blot
4. Rather sharp abdominal	yellowish-orange	whirlpool
5. Shooting: abdomen and back	white and blue	complex lightning
6. Cramp	gray	brain
7. Numbness	white	fizzing soda-water
8. Headache	dark blue	spear-head

III. PHOTISMS WHICH ACCOMPANY AUDITION

The photisms which accompany auditory experiences, like those which accompany pain, have very definite forms; but unlike the pain photisms, they do not have color but merely brightness.

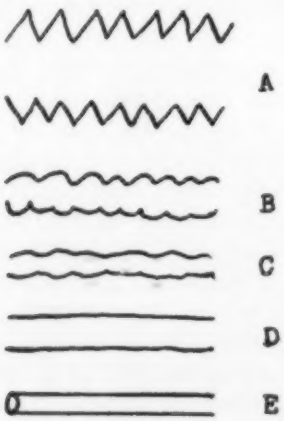

FIGURE 2

All of these photisms are seen a little above the line of vision and about thirteen or fifteen inches from the subject's eyes. They are always seen in the indirect field of vision.

1. *Human Voice:* The speaking voice of another person causes the subject to see such photisms as are drawn in Figure 2. Each

of these drawings is the actual size of the photism seen. Figure 2, A is a section of the photism caused by the rather shrill, *very rasping* voice of the subject's landlady. The more rasping a voice is the larger and sharper are the saw-teeth of the photism. B is the photism caused by a man's voice when it was somewhat harsh, and C is the same voice with much less harshness. The brightness of B was described as "dark gray—dull". D is a woman's smooth voice described as "light gray but dull". E is the voice of the subject's room-mate. This voice, which is very pleasing to the subject, is described as "light gray and metallic, that is, like bright shiny tin". Another very interesting feature of this last photism is that it is very definitely rod-like, very smooth and solid, and resembles certain tonal photisms described below. The

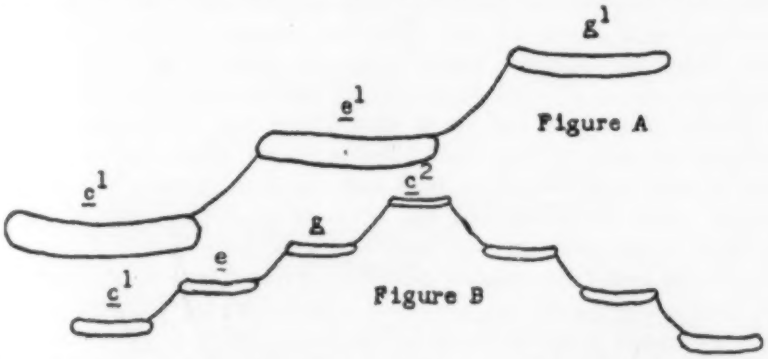

FIGURE 3. Tones sung by a woman. *A*, actual size of photism, *B*, the same much reduced.

first four appear to be two-dimensional. The subject observes the photism which is caused by her own speaking voice, and states that whenever she observes that it is becoming rough or jagged she modulates her voice so as to make the photism smooth and rod-like.

The subject was also tested for photisms which she associates with the singing voice. A woman with a trained, clear voice sang c^1, e, g, c^2, g, e, c^1, as ah, ah, ah, etc., while the subject observed her photism, which is drawn in Figure 3. (A is the actual size of the photism; B is the same on a smaller scale to indicate the relationship between ascending and descending tones.)

Each horizontal bar represents one tone. The lower tones are broader and darker than the higher tones. All tonal-bars are a light gray, but not of equal brightness. The tonal-bar is always slightly curved (as indicated in Figure 3) and rounded on the ends. Each tonal-bar is joined to the next one by a very light

line of which the subject feels definitely aware, although she cannot say with certainty that she sees it as she does the tonal-bar. The length of this connecting link between tones depends somewhat upon the tempo with which the tones are sung—the longer the interval between tones the longer the connecting link. As the tones are sung in succession, the subject can see clearly only two or three of the tonal-bars at once. If a slightly harsh tone is sung, the tonal-bar appears wavy and similar to Figure 2C. On one occasion e^2 was sung with a very pronounced crescendo with the result that the tonal-bar broadened very noticeably toward its right-hand side. This fact, as well as that of the arrangement of the tonal-bars, indicates that there is movement in the photism—movement from left to right as in reading.

One day the subject heard a three-months-old baby crying and screaming and observed her photism, which she described as a broad band of jagged lines some of which were horizontal, crossed by others at a 45 degree angle and passing from the upper and lower left. All the lines resembled the "lightning" experienced with pain, except that they were not thin lines but rather broad bands an inch and an inch and one-half wide. The photism was not clear and distinct, but seemed to be a mass of jagged lines and bands pointing and moving toward the right.

2. *Noise and Interrupted Sounds:* Four types of stimuli were used in this group. First, a rather large piece of galvanized sheet iron was struck several times in succession with a stick thus causing a sharp and unpleasant sound. The photism experienced by the subject was a zig-zag band, about five thirty-seconds of an inch wide, with large saw-teeth. An increase in the intensity of the sound caused a corresponding increase in the size of the saw-teeth. The brightness of this image was very light gray, and was described by the subject as being "like water", that is as to brightness. The form and actual size of this photism is indicated in Figure 4, A.

The second type of stimulus used was a frog snapper. Two sizes of snappers were used; the large one had a snapper spring 1½ by 2½ inches, and the smaller one (ordinary size) had a spring ⅝ by 1¼ inches. The large snapper, which was used first, was snapped continuously for a time and at a uniform tempo of 126, as determined by a metronome after the experiment. The photism is "large, very black and shiny—inky". It is like an horizontal ellipse or "doughnut" with a hole in the center which has no brightness. Each "egg-shaped" figure represents one "snap" of the snapper and is joined to the next "snap" by two thin, parallel lines as indicated in Figure 4, B. The size of each

"snap" is about ¼ by ¾ inches. The small snapper was used in the same manner as the large one and was snapped at about the same tempo. The photism experienced resembles the other one in form, but it is much smaller in size and much brighter. It is drawn in Figure 4, C. The size of each ellipse is about $^{3}/_{32}$ by ¼ inches; the brightness is light gray—"metallic", that is bright and shiny, and the connecting links are very light, thin lines. Thus the difference between these two photisms is one of size and brightness which corresponds to the difference in pitch and intensity.

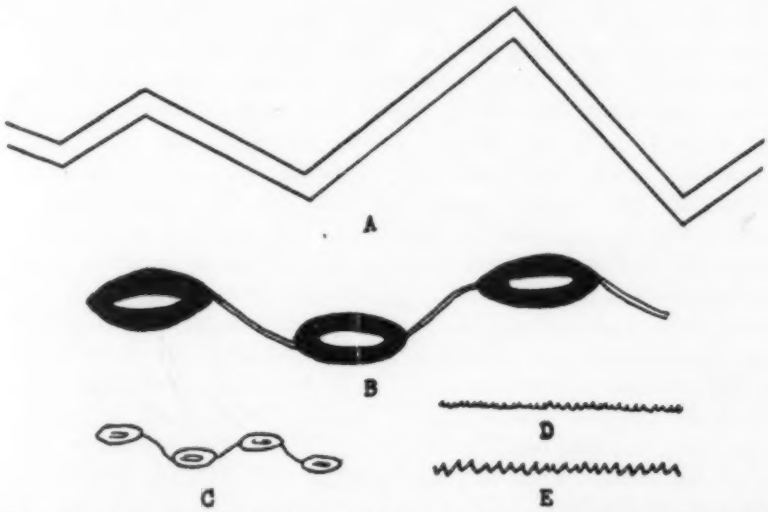

FIGURE 4. *A*, noise caused by striking sheet iron; *B*, large frog snapper; *C*, small frog snapper; *D*, high pitched buzz; *E*, low pitched buzz. All figures are actual size.

Third type of stimulus was the buzz of an inductorium which was so adjusted that two different pitches were used, first a high pitch and then a low pitch. In both cases, the photisms were saw-tooth lines, as indicated in Figure 4, D and E, the higher pitch causing a light gray, narrow line with fine teeth, and the lower pitch causing a darker gray, broader line with larger teeth.

The fourth type of stimulus was the uniform click of a metronome which was set at various speeds. The photism seen consisted of uniform steps which went down and to the right. The first click was seen as an horizontal bar; the second click was seen as a vertical bar attached to the right-hand end of the first, perpendicular to it, and extending down from it; the third click was again seen as an horizontal bar attached to the lower end

of the second and extending to the right of it; the fourth click was again like the second, except one step lower down, etc. All bars are of equal length, width and brightness for one tempo. The tempo regulated the length of the bars and their brightness. The slower the beating of the metronome the longer and the darker gray were the bars. When the tempo was 60 the bars were 3¾ by 3/16 inches; when 80, 2¾ by 5/32 inches; when 126, 1¾ by ⅛ inches; when 144, 1¼ by 3/32 inches; when 152, ⅞ by 1/16 inches; when 160, 13/16 by 1/32 inches, and when 192, ½ by 1/64 inches. At about 154 the bar became narrow enough so that the subject called it a single line.

3. *Instrumental Music:* Here a variety of stimuli were used beginning with tuning forks. The forks used were c^1 256 vs., e^1 320 vs., g^1 384 vs., c^2 512 vs., and each was mounted on its appropriate resonance box. Each fork was sounded alone beginning with c^1 and the subject noted her photism. In each case it was an horizontal, perfectly smooth bar, with no apparent movement, and which lasted as long as the tone lasted. The photism did not appear immediately, but seemed to emerge from a haze which "melts down and the line appears". Each tonal-bar has its position corresponding to its position on the staff, c^1 being at the bottom and c^2 at the top. Not only do the tonal-bars differ as to position but as to width and brightness, the lower the tone the wider and darker the bar. All, however, were described as very light gray—"like water". The width of each tonal-bar was as follows: c^1 one and ¾ inches, e^1 1 and ⅛ inches, g^1 ½ inch, and c^2 ¼ inch. Note the uniformity with which the tonal-bars decrease in width.

Attention should be called to the fact that these four tones are the same as those sung, the photisms of which were described above. The relative positions and brightnesses of the tones sung and sounded are much the same, but the pure tones of the tuning forks are broader and perfectly straight which was not the case when the tones were sung.

When several of the forks were struck in rapid succession, the subject could see all the tonal-bars at once and always in their appropriate positions. On one occasion when c^1 was accidentally struck with the handle of the tuning fork hammer and immediately followed by the pure tone, the subject saw the tonal-bar as usual but crossed by a thin oblique line which crossed from upper-left to lower-right at a 45 degree angle. A similar case was noted in the crying of the baby.

After the tuning forks, a pipe organ was used as the source

of auditory stimulation. Four types of stops were used: Open Diapason, Oboe Bassoon, Flute, and Aeoline. When the notes c^1, e^1, g^1, c^2 were played with the Open Diapason, the photism seen by the subject was a hollow tube with a hole whose diameter was about one-third of that of the tube. Each tone was represented by a horizontal section of the tube which was joined to the next tone by a curved section of the tube, as indicated in Figure 5, A. When the first tone was played, the subject saw the end of the tube and reported that she was looking in at the open end. When the tones were sounded in close succession, the subject saw the end of the tube only at the beginning; but when

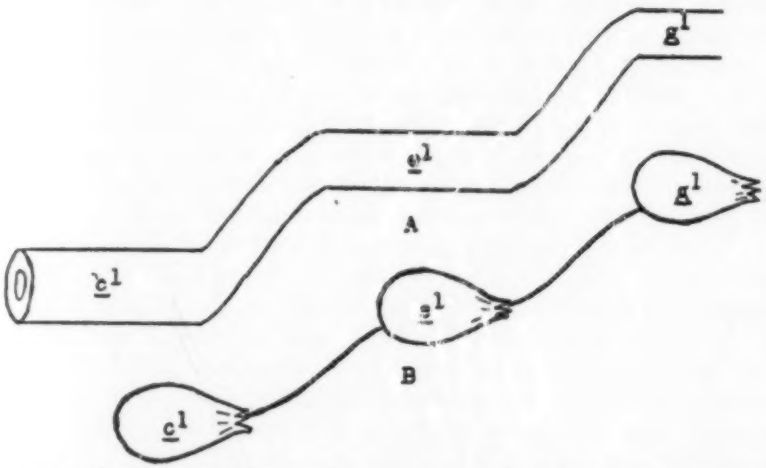

FIGURE 5. Photisms caused by organ tones. *A*, Open Diapason; *B*, Oboe Bassoon.

the tones were played staccato, the subject saw each tone as beginning a new tube. As noted above, the higher tones were seen above the lower tones with definite movement to the right. The photism was dark gray, and the higher tones were brighter and slightly narrower than the lower tones.

The photism which accompanied the Oboe Bassoon was distinctly different from the tube seen with the Diapson. This photism was "bag-like", each bag representing a tone and connected to the next bag by a rather light line. Each bag was solid, wrinkled at the open end, light gray, about the size of a small hen's egg, and joined to the next by a connecting link which was about three or four inches long. For higher tones the "bags" were slightly smaller and higher than for lower tones. This photism is drawn in Figure 5, B.

The photisms seen with the Flute and Aeoline were much the same. Each tone was seen as a solid tonal-bar—an oblong—joined to the next by a light line. The tonal-bar for the Flute c^1 was about 7/8 by 3/16 inches and the same note with the Aeoline stop was about 1 by 1/16 inches. In all other respects these photisms were like the others already discussed. The pipe-organ chimes caused photisms almost identical with those described above as accompanying the singing voice. (See Figure 3, A.)

As a last step in this examination of the subject's photisms, an Edison record was played. The record was "Aloha Oe" (Queen Liliuokalani) a cornet solo played by Bohumir Kryl.[1] The subject's photism of the solo was tubular and like the one seen in connection with the Open Diapason on the pipe organ, except that this photism was much larger. The tonal-tube for the first note of the solo was about 1¼ by 4 inches, and the other tones were in proportion. The higher tones were slightly narrower than the lower and all were joined to one another as a continuous tube when played as a continuous phrase. At the beginning of each phrase, however, the subject could see the open end of the tube. This photism was described as being light gray. (See Figure 5, A, for general form.) When this same tune was whistled, the photism was similar to the one just described, except that it was seen as a band about 3/16 of an inch wide instead of as a tube, and the tonal-bars were somewhat curved as in the singing voice. The connecting links in the case of the whistling, however, were the same width as the tonal-bars, which was not the case in singing.

IV. CONCLUSION

We have examined carefully the photisms which the subject experiences in connection with pain and audition and have found a number of significant and interesting facts. The subject always experiences photisms whenever she is stimulated in either of these two sense departments. A very essential part of the photism, in each case, is its form. In all but two types of pain—cramp and numbness—the photisms have color in addition to a characteristic form; but in the audition photisms color never appears—merely brightness. In all the pain photisms but two—dull, throbbing pain and cramp—there is movement of some kind. Another interesting item is that some photisms are two-dimensional, whereas others are definitely three-dimensional. This is true of both types of photisms.

[1] Edison, No. 50613-L.

Movement is indicated in the audition photisms by the positions of the various elements, that is, the succeeding tones are always seen to the right of the preceding tones. Although these photisms vary as to form, size and brightness there are some marked similarities: higher tones are always seen as being above lower tones; all tones with the exception of the Oboe Bassoon are seen as two-dimensional bars or three-dimensional tubes. Other sounds, not tones, manifest other features of which the saw-tooth form is quite characteristic. All of these photisms are a very intimate part of the subject's experience and, for her, are as vivid as actual perceptions.

SHAKESPEARE'S PSYCHOPATHOLOGICAL KNOWLEDGE: A STUDY IN CRITICISM AND INTERPRETATION

By IRVING I. EDGAR, M.A., M.D.
DETROIT, MICH.

I

THE greatness of William Shakespeare rests almost entirely upon his vivid sense of observation, upon his uncanny psychological insight into human nature and upon his genuine ability, as the true creative artist, to synthesize by means of his imagination, the play of the human passions, into living poetry and living drama. But Shakespeare encompassed, with understanding, all that was about him—the good and the bad, the beautiful and the ugly, the fanciful and the real, the comic and the tragic. Because the abnormal states of mind came within the range of his mighty vision, and because he endowed his delineations of these states of mind with truth, intensity and power, Shakespeare has been falsely raised to the pinnacle of special knowledge in psychopathology. Thus Dr. J. Rogers considers that "As a minister to the mind . . . he has no peer".[1] Dr. Max Kahn feels that "Shakespeare's knowledge of insanity was immense. . . ."[2] Dr. G. E. Price speaking of "Shakespeare as a neuropsychiatrist", says, that ". . . his insight and analysis of the workings of the human mind is something at which to marvel. . . . Nowhere . . . do we find so many and such remarkable descriptions of senility as we find in the writings of Shakespeare".[3] While even the disciples of Freud believe that, "The myriad-minded Shakespearean writer had an intimate knowledge of the truly mentally diseased".[4] In truth, every new advance in the field of psychology finds conformity in the characters of Shakespeare. For Shakespeare knew human nature, and he depicted it with truth. And human nature does not change to any degree with time. Therein lies the real greatness of the man.

[1] "Shakespeare as Health Teacher." Scient. Month., II (July, 1916), p. 590.
[2] "Shakespeare's Knowledge of Medicine." N. Y. Med. Jour., XCII (Oct. 29, 1910), p. 864.
[3] "William Shakespeare as a Neuropsychiatrist." Ann. Med. Hist., X (1928), p. 159.
[4] Alexander, R. "Hamlet the Classical Malingerer." Med. Jour. & Record, LXXX (1929), p. 287.

There are portions of all of ourselves in the characters of Shakespeare. Therein lies the only real source of controversy.

Upon our experiences in life, and possibly on our heredity must depend our interpretation of psychological actions in Shakespeare's characters. Controversy involves only these interpretations. For as mentioned before, practically all critics agree that Shakespeare knew the human mind and could depict the play of the passions even unto delineations of madness. Let us listen to the voices of some of these critics, they resound with nothing but expansive praise—and this from specialists in pathological psychology, physicians to the insane.

Dr. Brigham (1844), head of an asylum in Utica, referring to Shakespeare's "remarkable ability and accuracy" in regard to delineating insanity, says, "There is scarcely a form of mental disorder he had not alluded to and pointed out the causes and method of treatment".[5] And again, "his knowledge of insanity was not only great and varied . . . but his views . . . were very far in advance of the age in which he lived".[6] He concludes by saying, "In this extensive establishment (N. Y. State Lunatic Asylum, Utica) are all the insane characters described by Shakespeare".[7]

Dr. Isaac Ray (1847) feels ". . . in his knowledge of insanity Shakespeare was in advance of his own and succeeding generations",[8] and that "in the pages of Shakespeare are delineations of . . . (insanity) that may be ranked with the highest triumphs of their masterly genius".[9] With regard to the treatment in vogue at the time, Dr. Ray comes to the conclusion:

> Would that we were able to say that courts of our own times have entirely avoided this error and studied the influence of insanity upon human conduct more by the light of Shakespeare . . . than of metaphysical dogmas and legal maxims.[10]

Dr. J. C. Bucknill (1887) likewise goes into veritable rhapsodies of praise over Shakespeare's ability in developing psychological situations, for, says he, "Shakespeare not only possesses more psychological insight than all other poets but more than all other writers".[11] He speaks of the poet's "intimate knowledge

[5] "Shakespeare's Illustrations of Insanity." American Journal of Insanity, I (1844), p. 27.
[6] Ibid., p. 27.
[7] Ibid., p. 30.
[8] "Shakespeare's Delineations of Insanity." American Journal of Insanity, III (1847), p. 289.
[9] Ibid., p. 290.
[10] Ibid., p. 293.
[11] The Mad Folk of Shakespeare. London: Macmillan & Co., 1867, p. 165.

of the normal state of the mental functions in every variety of character".[12] And further than this: "The consistency of Shakespeare is in no characters more close and true than in those most difficult ones wherein he portrays the development of mental unsoundness",[13] for, continues Bucknill, "In his hands the laws of mental aberration are as sure as those of the most regular development."[14] His unbounded enthusiasm takes him to the height of saying,

> Our wonder at his profound knowledge of mental diseases increases, the more carefully we study his works; here and elsewhere, he displays with prolific carelessness a knowledge of principles, half of which would make the reputation of a modern psychologist.[15]

Dr. A. O. Kellogg, too, speaks of "Shakespeare's intuitive psychological knowledge",[16] for, "To suppose that Shakespeare obtained his knowledge of insanity and medical psychology from his contemporaries, or from works on these subjects extant in his day, is simply absurd".[17] Referring to the "Extraordinary accuracy and facility manifested by the great dramatist in the delineations of mind as warped and influenced by disease",[18] Dr. Kellogg says, that ". . . he understood insanity in all its varied forms; and it would not be more difficult to show that Shakespeare was once physician-in-chief to Bedlam Hospital than to establish many other things that have been asserted respecting his earthly career".[19] He points out that contrary to the practices and beliefs of the time with regard to insanity, Shakespeare . . . believed that insanity was a disease of the brain and could be cured . . . by judicious care and management, all of which he, Shakespeare, points out as clearly as it could be done by a modern expert",[20] for ". . . after nearly two centuries and a half we have little to add to what Shakespeare appears to have known of these intricate subjects".[21] He quotes Dr. Brigham, head of an asylum in Utica, to the effect that all of Shakespeare's insane characters could be found in his institutions, and

[12] Ibid., p. 164.
[13] Ibid., p. 164.
[14] Ibid., p. 166.
[15] Ibid., p. 197.
[16] Shakespeare's Delineations of Insanity, etc. New York: Hurd & Houghton, 1868, p. 14.
[17] Ibid., p. 9.
[18] Kellogg, A. O. "Shakespeare's Delineations of Mental Imbecility as Exhibited in His Fools and Clowns." American Journal of Insanity, XVIII (1861), p. 97.
[19] Ibid., p. 98.
[20] Shakespeare's Delineations, etc. New York: Hurd & Houghton, 1868, p. 11.
[21] "Shakespeare as a Physiologist." American Journal of Insanity, XVI (1859), p. 135.

further, that there was "little to add to his method of treating the insane".[22] With regard to certain phases of insanity, Dr. Kellogg "is struck with wonder and astonishment, that one man (and he a layman) should have known more of this most obscure subject than all the physicians of his time", and should have "exhibited a knowledge of the operations of the mind . . . far beyond that of his own times, and quite equal to that of the most accomplished psychologists of our own".[23] Finally, a consideration of Shakespeare's fools and clowns leads Dr. Kellogg to speak of the "Galaxy of fools such as nowhere else is to be found", and of "every shade of folly, imbecility and mental obtuseness . . . represented, . . . with a truthfulness and vigor which has never been equaled, . . ."[24] "so extensive, varied and rich is Shakespeare in his illustrations of the almost endless forms of mental imbecility."[25]

Both Drs. Bucknill and Kellogg in their more detailed discussions of the mentally aberrant characters, individually, come to the same conclusions. Because both were physicians to the insane, because their work on the subject appeared about the same time, and because their points of view are similar, we shall discuss this phase of their work together.

In their consideration of the character of Lear both hold that he represents a definite case of senile dementia, not only from the beginning of the play, but also previous to it. "The mind of Lear is, from the first, in a state of actual unsoundness, or to speak more precisely, of disease."[26] Only when the character is approached from such a standpoint, they claim, can all the actions be explained. Thus Dr. Bucknill says, "The accepted explanation of Lear's mental history, that he is at first a man of sound mind . . . is a gross improbability, . . . but if . . . it be accepted that the mind of the old king has, from the first entered upon the actual domain of unsoundness, the gross improbability at once vanishes."[27] . . . Dr. Kellogg also, is not in sympathy with those who regard "the ingratitude and unkindness of his daughters",[28] as the cause of Lear's insanity. This, he states, is the view entertained by those critics who are "far more ignorant of psychology than the poet who wrote two hundred

[22] Ibid., p. 147. Shakespeare's Delineations, etc., *op. cit.*, p. 27.
[23] "Shakespeare's Delineations of Mental Imbecility, etc.", *op. cit.*, XVIII (1861), p. 97.
[24] Ibid., p. 99.
[25] Ibid., p. 101.
[26] Bucknill. The Mad Folk of Shakespeare, *op. cit.*, p. 177.
[27] Ibid., p. 162.
[28] Ibid., p. 143.

years before them. . . ."[29] Dr. Kellogg further states that "In none of Shakespeare's plays . . . is the psychological knowledge of the dramatist more admirably exhibited than in Lear."[30] And he holds, "with a late distinguished psychologist", that "the case of Lear is a genuine case of insanity from beginning to end, such as we often find in aged persons".[31]

In fact all critics today, who have any special knowledge of pathological psychology, consider Lear as a case of genuine senile dementia. Thus Dr. G. E. Price (1928) affirms, "It is in . . . *King* Lear . . . that Shakespeare gives his finest description of senile dementia."[32] Practically all critics, indeed, are unstinted in their praise of Shakespeare's marvelous ability at portraying this condition from the very beginning to the very end. They wonder at the little touches here and there, and the little psychological details which only specialists can recognize as significant. "At every step through this wonderful play (*King Lear*) we find evidence . . . of Shakespeare's wonderful medicopsychological knowledge—a knowledge scarcely possessed by any in our day, except those few who devote themselves to this special department of medical science."[33] Dr. Kellogg points out that "With great psychological exactness Shakespeare has from the first endowed Lear with those mental peculiarities and eccentricities which experienced medical psychologists recognize at once as the forerunners of confirmed mental disease, but which are usually overlooked by ordinary observers."[34] And it is only for this very reason, as Bucknill agrees, that . . . "the literary critics of Shakespeare (being only ordinary observers) have overlooked the early symptoms of Lear's insanity",[35] and failed thereby to recognize that ". . . from the first the king's mind is off its balance".[36] Speaking of Lear's consciousness of oncoming madness, Dr. Kellogg refers to the truth of this observation, saying that "It is one of the most common things in the world to find a man decidedly insane and yet conscious of his

[29] Shakespeare's Delineations, etc. New York: 1866, p. 17.
[30] "Shakespeare as a Physiologist and Psychologist." American Journal of Insanity, XVI (1859), p. 140. Shakespeare's Delineations, etc., p. 16.
[31] Shakespeare's Delineations, etc., *op. cit.*, p. 16.
[32] "William Shakespeare as a Neuropsychiatrist." Annals of Medical History, X (1928), p. 161.
[33] Kellogg, A. O. "Shakespeare as a Physician and Psychologist." American Journal of Insanity, XVI (1859), p. 143. Also Shakespeare's Delineations, *op. cit.*, p. 21.
[34] Shakespeare's Delineations, etc., *op. cit.*, p. 21.
[35] The Mad Folk of Shakespeare, *op. cit.*, p. 169.
[36] Ibid., p. 174.

infirmity."[37] Dr. Bucknill agrees with Dr. Kellogg in this respect, saying, that "This self-consciousness of gathering madness is common in various forms of this disease."[38] Referring to the cruel treatment accorded Lear by his daughters,[39] Dr. Kellogg says,

> If a modern psychological writer, with all the knowledge of modern times at his command, were laboring to convey to the minds of his readers the manner in which insanity is induced in those predisposed by nature to the disease, . . . he could not do better than point out the conduct of Goneril and Regan towards Lear, as set forth in Act II, Scene IV of the play.[40]

The psychology involved in the scenes of Lear on the heath,[41] calls forth the following from Dr. Kellogg: "Nothing in the whole range of dramatic literature can excel this . . . in psychological interest."[42] Thus the apparent failure of Lear to suffer physically from the storm, is a piece having remarkable psychological import. Lear says,

> When the mind's free,—
> The body's delicate; the tempest in my mind
> Doth from my senses take all feeling else,
> Save what beats there.[43]

To this Dr. Kellogg says, "It is a well known fact, that, when the mind is swayed by intense emotions, the sensibility even to intense bodily pain is often completely suspended. The physical endurance manifested by the insane . . . is truly astonishing."[44] Dr. Bucknill, of the same opinion, remarks, "In the excitement of insanity physical injury is not perceived for the same reason that a wound is not felt in the heat of battle."[45]

The ingratitude of Lear's daughters worming its way into his mind with the persistency of an auger, also gives rise to points of interest. Coleridge considers the end of this scene as the beginning of Lear's insanity for he says, "This scene ends with the first symptoms of positive derangement."[46] To which Dr. Buck-

---

[37] Ibid., p. 193.
[38] Ibid., p. 183.
[39] II, 2.
[40] "Shakespeare as a Physician and Psychologist," *op. cit.*, p. 143. Also, Shakespeare's Delineations, etc., *op. cit.*, p. 21.
[41] III, 2.
[42] *Op. cit.*, p. 22.
[43] III, 4, pp. 11–14.
[44] Shakespeare's Delineations, etc., *op. cit.*, p. 23.
[45] The Mad Folk of Shakespeare, *op. cit.*, p. 174.
[46] Quoted in Bucknill, *op. cit.*, p. 193.

nill says in disagreement: "Hardly so; it is but the climax of the disease. . . . The malady, which has existed from the first, has increased and developed, until it is now completed."[47]

In this scene too, Lear suffers from delusion, a sure evidence of insanity. He says to Edgar, "Hast thou too given all to they daughters?" To which Dr. Kellogg says, "How beautifully true all this is to nature, those who are at all acquainted with insanity can furnish ample testimony; as also, how admirably the genuine disease contrasts with the counterfeit, with which it is here brought in contact."[48] "Edgar's assumed madness presents a fine contrast to the reality of Lear's "[49] for "it has the fault, which to this day feigning maniacs almost invariably commit, of extreme exaggeration".[50] To the incident of the trial of Regan and Goneril in the form of the stools, Dr. Kellogg has this to say: "Scenes quite as ludicrous as the one set forth above are of daily occurrence in the wards of all extensive establishments for the insane. . . ."[51] What a compliment to that man Shakespeare.

Dr. Bucknill cites many more points of psychological interest in this play. Thus he mentions the apparent physical vigor of Lear and adds, "It is worthy of remark that Lear's age is physically strong and vigorous"[52] holding that "this state of hale bodily strength in senile mania is true to nature".[53] He mentions the presence of all the factors of insanity in Lear-exaggerated passion, perverted affection, weakened judgment, incoherence and delusion. He points out the tranquillity of Lear when among the insane as an evidence of Shakespeare's remarkable knowledge of pathological psychology. This is contrary to the opinion of Ulrici and others. Dr. Bucknill says, "The singular and undoubted fact was probably unknown to Ulrici that few things tranquillize the insane, more than the companionship of the insane."[54] "There is little, indeed, which, in the features of madness, Shakespeare allowed to escape his observation."[55]

Hamlet, too, offers us a wealth of evidence of Shakespeare's astounding ability to delineate the abnormal states of mind. Here

---

[47] Ibid., p. 193.
[48] "Shakespeare as a Physician and Psychologist," *op. cit.*, p. 146. Shakespeare's Delineations, p. 25.
[49] Bucknill. The Mad Folk of Shakespeare, *op. cit.*, p. 208.
[50] Ibid., p. 208.
[51] Shakespeare's Delineations, *op. cit.*, p. 26.
[52] The Mad Folk of Shakespeare, *op. cit.*, p. 173.
[53] Ibid., p. 174.
[54] The Mad Folk of Shakespeare, *op. cit.*, p. 207.
[55] Ibid., p. 205.

again critics disagree only in interpretation. Briefly stated there are four main interpretations of the character of Hamlet: (1) that the character represents a true feigned madness; (2) that it represents a combination of feigned madness and actual madness; (3) that the character is a remarkable illustration of Shakespeare's ability to portray a real form of insanity and (4) that the character represents a true example of an unresolved Œdipus complex.

The first interpretation is held by practically all literary critics not special students of psychological pathology. To this group belong Johnson, Schlegel, Goethe, Hallam, Robertson and many others.

The second interpretation is held mainly by Dr. J. C. Bucknill, probably the most important medical critic on Shakespeare. He says this of Shakespeare's ability to portray such a character: "The Feint is so close to nature, and there is underlying it withal so undeniable a substratum of morbid feeling, that in spite of ourselves, in opposition to our full knowledge that in his antic disposition Hamlet is putting on a part, we cannot dispossess ourselves of the idea, . . . that a mind fallen is presented to us."[56] And again: "How exquisitely is here portrayed the state of the reasoning melancholiac."[57]

The third interpretation is advanced to by Dr. A. O. Kellogg and is adhered to by most psychiatrists—Dr. Brigham, Dr. Ray, Dr. Connolly and others. Dr. Kellogg believes that "most critics have failed of a true estimate of *Hamlet* because of a want of medicopsychological knowledge on their part. It is only when Hamlet is considered insane that the character becomes consistent."[58] In line with this, the case of Hamlet is held up as a genuine case of melancholic madness—a psychoneurosis. Thus Dr. Brigham says, "In the life of Hamlet . . . we have a full history of a case of insanity . . . a case of melancholy madness",[59] "exquisitely drawn", and "finely portrayed". Dr. Kellogg states, "such a case he has given us in the character of Hamlet, with a fidelity to nature which continues more and more to excite our wonder . . . the delineation (being) . . . so true to nature that those who are at all acquainted with this intricate

[56] The Man Folk of Shakespeare, *op. cit.*, p. 71.
[57] Ibid., p. 71.
[58] "William Shakespeare as a Physiologist and Psychologist", *op. cit.*, XVI (1859), p. 409.
[59] "Shakespeare's Illustrations of Insanity." American Journal of Insanity, I (1844), p. 27.

disease are fully convinced that Hamlet represents faithfully a phase of genuine melancholic madness".[60] Dr. Kellogg further waxes so enthusiastic on Shakespeare's abilities in this direction that he no doubt allows his idolatry to run away with his reason for he says, "such are the varied phases of madness (portrayed), and how wonderful is that power of observation in our great dramatist, which has enabled him to draw them so minutely and accurately. His knowledge of the human heart and mind, under all circumstances and in all forms, whether of health or disease, is so accurate that he never makes a mistake . . .".[61]

Of the last interpretation of Hamlet as an example of an unresolved Oedipus complex, little can be said. It only serves to show how true to nature Shakespeare wrote. The Freudian concepts are an interpretation of the human mind—possibly a true interpretation. The development of Hamlet has been shown to be in accord with this interpretation . . . Thus Ernst Jones,[62] the leader of the psychoanalysis movement in Great Britain, Ella Sharp,[63] Norman J. Symons,[64] and others—all consider an unresolved Oedipus complex as the fundamental problem of Hamlet.

There are many more points of psychological interest, as showing the amazing knowledge of Shakespeare in his delineations of madness. There is Macbeth, and Othello, and Ophelia and Jaques and numerous others—all of which would require a large volume to handle.

One lone medical commentator, however, Dr. C. L. Whitmere (1928), seems to have accepted Shakespeare's mad folk for what they really are. Contrary to the opinions of Kellogg and Bucknill and others, he feels that Shakepeare ". . . shows no great insight into the field of feeblemindedness and only seems to have considered a person as feebleminded who was a groveling and drooling idiot".[65] This is in accordance with the Elizabethan idea. He further states that "most insanities looked about alike to him",[66] and he takes cognizance of the fact that Shakespeare has been guilty of "many inconsistencies" in the field of mental abnormalities.

---

[60] Shakespeare's Delineations, *op. cit.*, p. 37.

[61] "Shakespeare as a Physiologist and Psychologist", *op. cit.*, p. 429.

[62] "Oedipus Complex as an Explanation of Hamlet's Mystery." American Journal of Psychology, XX (1910), 72.

[63] "Hamlet's Impatience." Internat. Jour. Psycho-Analysis, IX (1929), p. 270.

[64] "The Graveyard Scene in Hamlet." Internat. Jour. Psycho-Analysis, IX (1928), p. 96.

[65] "Psychoses of Shakespeare's Characters." Illinois Med. Journal, LIII (1928), p. 64.

[66] *Op. cit.*, p. 65.

II

From the foregoing, it must be readily apparent that the approach of most of the neuropsychiatrists to the character problems in the mentally aberrant of Shakespeare's plays, is anything but an historical one. They view these characters as cases in their own asylums and make diagnoses by the tests and standards of their own time, too often supplying out of their own enthusiasm and imagination what is lacking in the characters, as Shakespeare intended them. But after all, these critics were specialists in their field and hence are entitled to the greatest respect regarding their opinions. Indeed, their interpretations of the mad folk in Shakespeare are masterpieces of logic and plausibility, entirely satisfactory from the modern psychiatrist's standpoint. Nevertheless, Shakespeare wrote almost three hundred years before these critics were even born; and it is questionable whether he deliberately intended his characters to be psychiatric studies. In fact, as Ruth L. Anderson says, in her most extensive study of *Elizabethan Psychology and Shakespeare's Plays* (1927), "he did not seek consciously to embody psychological principles anywhere in his work, for he was preëminently an artist".[67] Scholarship has ingeniously uncovered "from the psychological treaties contemporary or nearly contemporary with Shakespeare and, for the most part, available to him in English",[68] a complete system of Elizabethan psychology, with such characteristics and peculiarities as to readily allow for the satisfactory explanation of the numerous character problems without necessity of recourse to modern neuropsychiatric principles. That such character problems easily lend themselves to neuropsychiatric interpretations, is only the greater tribute to Shakespeare, the artist, and not Shakespeare, the psychopathologist.

Shakespeare was primarily an Elizabethan. His characters are Elizabethan. The psychology he adhered to was Elizabethan. It seems that the chief difficulty of the commentators in the last century and a half, in regard to the Shakespeare characters, has been this: that in accordance with modern conceptions of personality, they have sought for unity and consistency in these characters. Dr. Kellogg, after considering Shakespeare's delineation of King Lear, says,

> Thus far the whole character is psychologically *consistent*, and the wonderful skill and sagacity manifested by the great daramtist in seizing

[67] University of Iowa Studies, III, No. 4 (Iowa City, Iowa, 1927), p. 4.
[68] Ibid., p. 4.

upon those premonitory signs, which are usually overlooked by all . . . and weaving them the character of his hero as a necessary element, without which it would be incomplete, like those of inferior artists, is a matter of wonder to all modern psychologists.[69]

Of *Hamlet* too, he speaks, as "furnishing . . . evidence of the wonderful sagacity of the poet, and the truthfulness to nature, and *consistency* with which he works out whatever he undertakes".[70] But there is no consistency and there is no unity; the actions of the characters and their motivation are often grossly, improbably, and to say the least, highly perplexing.[71] Hence, these characters must be mad folk; and they are,—when measured by modern rules of behavior. But the fact is, that "The Elizabethan did not search for unity in human behavior. His theory of the soul and of its relation to the macrocosm", as Miss Anderson has so aptly pointed out, "accounts for inconsistencies".[72] In truth, continues Miss Anderson, ". . . Elizabethan thinking emphasizes variability and even inconsistency in conduct . . . Usually, moreover, he (Shakespeare) was handling old material sometimes even old plays. His characters do the things previously set down for them to do, and this fact may account in part for their inconsistencies."[73]

In the case of Lear, the modern passion for unity and consistency in characterization, has led Shakespearean commentators into great difficulties. The Gordian Knot in *King Lear* has been this: that Lear's action in dividing his kingdom between Goneril and Regan, and casting off his favorite daughter Cordelia,—is absurd, irrational, improbable, and lacking in true motivation. Samuel Johnson side-tracked the issue by merely arguing that the improbable conduct of Lear "is represented according to histories at that time vulgarly received as true",[74] and "that our author well knew what would please the audience for which he wrote".[75] Coleridge is more or less in agreement with Johnson on this point. However, he does not attempt to explain the first scene satisfactorily:

---

[69] Shakespeare's Delineations, *op. cit.*, p. 20.

[70] Ibid., p. 67.

[71] It is interesting to note in this regard, as Professor Stoll has pointed out ("Hamlet: an Historical and Comparative Study", University of Minnesota Studies in Language and Literature, No. 7, 1919, pp. 85 ff.) that previous to 1780, Hamlet was not considered a perplexing character. The probable explanation of this is, that up to this time men continued along the same avenues of thought as did Shakespeare.

[72] *Op. cit.*, p. 174.

[73] *Op. cit.*, p. 175. See also Professor Stoll's articles on Hamlet and Othello listed in the bibliography; also Professor L. L. Schucking, Character Problems in Shakespeare's Plays (1922), pp. 19 ff., 111 ff., etc.

[74] Quoted in D. Nichol Smith, Shakespeare Criticism (1916), p. 135.

[75] Ibid., p. 136.

Let the first scene of this play, he writes, have been lost and let it only be understood that a fond father had been duped by hypocritical professions of love and duty on the part of two daughters to disinherit the third, previously and deservedly, more dear to him—and all the rest of the tragedy would retain its interest undiminished and be perfectly intelligible.[76]

This, of course, is begging the question. The trial of professions, Coleridge considers a trick, accepted by the Elizabethan audience because it was "an old story rooted in the popular faith".[77]

Allardyce Nicoll[78] solves the problem by explaining away all the improbabilities and absurdities in *King Lear* on the grounds that Shakespeare only followed an older play, *King Leir*. Indeed, this older play, which was undoubtedly Shakespeare's immediate source, does give acceptable motivation for Lear's actions; for here, *King Leir,* after the death of his queen, feeling unable in the task of governing his three daughters, for "fathers best do govern sons", decides to divide the kingdom among the three of them. Goneril and Regan have been provided with husbands. But Cordella objects to any husband chosen for her "unless love allows". Leir therefore, decides to ask for public professions of his daughters' loves in order to trap Cordella into same extravagent verbal expression of her love for him, upon which he is merely to ask her such a simple request as marrying a king of Brittany, "which she cannot well deny . . ." This, of course, is definite motivation for the trial of professions, entirely lacking in Shakespeare's *King Lear;* and the explanation of many critics that Lear's action in this respect was but the result of a "silly trick", "a momentary impulse of vain nature",[79] "or a freak of the imagination"[80] "suddenly and most unexpectedly baffled and disappointed",[81] is more applicable to this older play than to Shakespeare's *King Lear.* Nor is the explanation that its improbability was allowed by Shakespeare because of popular acceptance entirely valid, for whoever wrote the older *King Leir* apparently did not depend upon this popular acceptance, but provided rational motivation.

But the neuropsychiatrists, as already pointed out, bring order out of chaos and consistency out of inconsistency. The actions of

[76] Ibid., p. 286.
[77] Ibid., p. 286.
[78] Nicoll, A. Studies in Shakespeare. New York: Harcourt, Brace & Co., 1928.
[79] Boas, S. Shakespeare and His Predecessors, p. 432.
[80] Ulrici; quoted in Furness's Variorum Edition of King Lear, p. 9.
[81] Coleridge's Lectures, quoted in D. Nichol Smith's Shakespeare Criticism (1916), p. 286.

Lear are absurd, improbable, disordered, inconsistent. A lunatic's actions are absurd, improbable, disordered, inconsistent. Therefore Lear was a lunatic from the very first to the very end. "That the trial was a mere trick"[82] Dr. Bucknill considers unquestionable, but, asks he, ". . . is not the significance of this fact greater than Coleridge suspected? Does it not lead us to conclude that from the first the king's mind was off its balance, that the partition of the kingdom involving inevitable feuds and wars, is the first act of his developing insanity, and that the manner of its partition, the mock trial of his daughters' affections and its tragical denouement is the second, and but the second act of his madness."[83] Thus is the passion for consistency and unity in characterization satisfied. The historical skeptics, notably Hardin Craig, consider the improbabilities in Lear's actions in the first scene, as acceptable to Elizabethan conventions and Elizabethan psychology, and hence proper in themselves. In this simple manner, they come at peace with themselves on this moot question. What then is this play *King Lear*? "Shakespeare's purpose as a writer of plays", according to Hardin Craig, may have been simply "to tell a story"[84] with "the characters . . . but symbols and dramatic puppets employed with the object of narration".[85] But surely this cannot apply to *King Lear*, for *King Lear* is not much of a story. It begins, as it were, with a climax, the division of his kingdom and the disinheriting of his younger daughter. After that, Lear is essentially actionless, adding very little to the narration, but nevertheless dominating the play. *King Lear*, according to Craig, is a drama involving the violation of Elizabethan ethics. It is a tragedy of the violation of nature as understood in the Renaissance sense and outlined in *Wilson's Arte of Rhetorique*.[86] According to this, four principal virtues make up nature. These are: Wisdom, courage, temperance, and justice. "*King Lear* presents a world which suffers wreck through the violation of these virtues . . ."[87] All in all Hardin Craig, after showing "point by point", all the ethical virtues of *Wilson's Arte of Rhetorique* as violated in the play, concludes that "the ultimate of evil" (as held in the philosophy of the Renaissance) "prevails in *King Lear*", which "pictures, in the tragedy of a king, who is also kingship, and of a father who

[82] Bucknill, J. C. The Mad Folk of Shakespeare, *op. cit.*, p. 174.
[83] Ibid., p. 174.
[84] Shakespeare, p. 53.
[85] Ibid., p. 53.
[86] Edited by G. H. Mair.
[87] Craig, Hardin. "The Ethics of King Lear." Philol. Quart., IV, p. 98.

is also fatherhood, the return to chaos in a kingdom and a royal family, the ruin of the centers and therefore, of the whole body politic".[88]

This interpretation of *King Lear* is an ingenious one, but it is entirely too farfetched and can easily be proved untenable. In the final analysis, we may still hold that the neuropsychiatrits' interpretation of *King Lear* is the most satisfactory and plausible one we yet have.

This is not so, however, in the case of *Hamlet.* The works of Stoll, Bundy, Anderson, Schucking and others, prove conclusively that the character of Hamlet is a representation of the melancholy type as understood in the Elizabethan period, and not as a type of melancholic psychosis as the neuropsychiatrists, we have considered, would have us believe. Thus, Professor Levin L. Schucking[89] takes the characteristics of Hamlet and shows how they comply with the characteristics of the general melancholy type as described in the character book so common at this time. According to Anderson, the psychological treatises of this period, consider these very characteristics, and "since we have found that Shakespeare was conversant with their theories, it is possible that he drew from them here".[90] In fact, as Miss Mary I. O'Sullivan has shown, Shakespeare actually made use of Timothy Bright's *Treatise of Melancholy* in the writing of Hamlet.[91]

Furthermore, Professor E. E. Stoll has shown that Hamlet's madness is a feigned madness taken over by Shakespeare from the *Fratricide Punished* and the *Spanish Tragedy* of Kyd as a device to make Hamlet's access to the king easier.[92] All in all then, the problem of *Hamlet* ceases to become perplexing and enigmatical from this standpoint. It is not necessary here, as in *King Lear,* to attribute definite true melancholic madness to the character in order to bring about unity and consistency of action. The character problems in *Hamlet* are readily and rationally explained on the basis of a feigned madness in an individual in whom the faculties of the soul (in the Elizabethan sense) are at war, wherein the heart and the imagination conspire to blind the reason.[93]

---

[88] Craig, Hardin. Shakespeare, *op. cit.*, p. 120.

[89] Character Problems in Shakespeare's Plays. Henry Holt and Co., 1922, pp. 157 ff.

[90] *Op. cit.*, p. 163. I am indebted to Miss Anderson's work for most of the material in this section.

[91] "Hamlet and Dr. Timothy Bright." P.M.L.A., XLI, 1926, pp. 667–679.

[92] "Hamlet: an Historical and Comparative Study." University of Minnesota Studies in Language and Literature, No. 7 (1919), p. 14.

[93] Bundy, Murray W. "Shakespeare and Elizabethan Psychology." *Journal of English and Germanic Philosophy,* XXIII (1924), pp. 530 ff.

A STUDY OF OBJECTIVE DREAM ACTIVITY IN ABNORMAL CHILDREN *

By F. K. BERRIEN, M.A.
PSYCHOLOGICAL RESEARCH FELLOW AT THE ALLENTOWN (PA.) STATE HOSPITAL

THE object of the present investigation was to supply some objective data on the topic of children's dreams. In all the dream research hitherto published, so far as the writer is aware, the conclusions have been based upon recalled dreams only. Such data can thus be classified as introspective. While it is beyond the scope of this paper to point out the limitations of the introspective technics, let it be said that wherever it has been possible to substitute objective observations, conclusions have usually been more accurate and undeniable.

The introspective technics are particularly unsuited to the study of children's dreams for a number of reasons. The most important of these have been noted by Kimmins:

"First, young children have great difficulty in separating the dreaming from the waking element.

"Second, their powers of description are naturally very limited and their words convey to the adult mind very different impressions from that which they wish to convey.

"Third, the child will inevitably fill up the gaps in the dream and will reject as absurd such items in the dream which are contrary to their experience.

"Fourth, a dream described even a few hours after waking is a very different record from that obtained directly the child awakes, consequent of the fusion of the dream material with waking thoughts." (5)

The technic devised for this particular study involved the observation and recording of objective evidences of dreaming such as talking, laughing, sudden kicking, sleep walking, moaning, grinding of teeth, and pantomime movements. The attendants and nurses on duty where the children were quartered were instructed to record the exact observations, the hour of occurrence, make some judgment as to the emotional coloring and note any other peculiarities.

The patients who supplied the data for this study were all

* Received and acknowledged December 11, 1933.

committed to the Allentown (Pa.) State Hospital and ranged in age from six to sixteen, the mean age being twelve years, ten months. Of a total of 44 cases, 16 had diagnosis of Psychosis with Post-Encephalitis, 10 were Borderline Mental Deficiency cases, 7 were psychopathic personalities, 3 were undiagnosed, while the remainder were either epileptic, depressed, or environmental problems.

It may be objected that the observations are not dreams, since they do not conform with the ordinary definition of a dream, which may be stated as an hallucination occurring during sleep. Such an objection may have some justification but it is maintained that these observations are just as valid data for dream study as is the verbal account of a dream given by the individual the day following the occurrence of the dream. These recorded observations are not dreams themselves; neither are verbal accounts considered dreams *per se*. Both are indications of dreams. When one considers the great importance of memory in the verbal account and the coincidental unreliability, one is impressed by the great need of using some other type of data than recalled dreams in a study of this nature. Few would question that the type of data here presented may be considered more valid than the ordinary verbal account of a dream.

Days of observation were not entirely consecutive. During the first twenty-one days there was no break and then due to a change in the personnel seven days were allowed to intervene following which observations were resumed for the remaining nine days.

The activities and life of these children were as closely controlled as possible. They all followed a definite schedule of work, play and meals which varied but slightly from day to day. It can certainly be said that the activities and environment of these children were more constant during the period when data were collected than would be true of the average child living outside an institution.

DISCUSSION OF RESULTS

The dreams were divided into two general classes; those in which there was a definite emotional coloring and those in which emotion was either lacking or of a very indistinct type. The former group was subdivided into the following sub-classes: dreams of anger, commanding, fear, resentment, pain, pleading, affection, pleasure, anxiety, boasting, and sadness. The dreams without emotional coloring were characterized chiefly by mum-

bling, walking or talking, general restlessness, and pantomime movements.

A tabulation of the daily frequency of dreams indicated considerable variation from day to day in respect to the hour of greatest frequency. In some days dreaming seemed to be more prevalent during the early part of the night and on other days the hour of greatest frequency was later. This holds true not only for emotional dreams but also for dreams lacking emotional coloring.

On the fourth day only one dream with emotional coloring was reported, whereas there were eighteen dreams without emotional

TABLE I

	Time									
	P.M.			A.M.						
Character	9–10	–11	–12	–1	–2	–3	–4	–5	Total	
Anger	6	10	12	4	4	6	4	1	47	
Commanding	6	9	12	6	6	6	7	9	61	
Fear	7	9	12	6	4	6	5	9	58	
Resent	5	0	6	6	6	10	2	4	39	
Pain	5	4	4	2	2	1	2	0	20	
Affection	0	0	0	1	0	0	0	0	1	
Pleasure	18	20	16	8	12	16	7	13	110	
Pleading	7	2	3	4	4	3	0	1	24	
Anxiety	1	0	0	1	0	0	0	1	3	
Boasting	1	0	0	0	0	0	0	0	1	
Sadness	1	1	0	0	0	0	1	0	3	
Total	57	55	65	38	38	48	28	38		367
Mumbling	27	20	18	18	20	20	10	16	149	
Walking or Talking	18	15	13	1	5	12	4	4	72	
Restless	6	4	4	5	5	6	3	7	40	
Pantomime Movements	2	3	1	1	1	2	1	0	11	
Total	63	42	36	25	31	40	18	27		282
Grand Total	120	97	101	63	69	88	46	65		649

coloring. Furthermore, the average number of emotional dreams during the previous three days was approximately twelve and for the following three days was fifteen. The daily reports for that day indicated that the children had attended a movie and went to bed approximately one hour later than usual. Five days later the children attended a play and a similar reaction in dream frequency was noted although here it was not as marked as in the first instance.

There was a gradual but definite decline in the total frequency per day as the period progressed. The reason for this is difficult

to determine. It might be due to a diminution of accuracy in making observations. This hypothesis seems unlikely from a subjective judgment of the interest displayed in the project by the attendants and nurses.

A second possibility lies in the fact that during this time the period of daylight was gradually increasing. Such an increase of daylight with its supposed influence on the depth of sleep may be the determining factor in the decline in the frequency of dream activity.

In Table I we have the frequency of dreams at the various hours of the night according to their emotional coloring. The average hourly variations differ from those reported by Berrien (1) when it was discovered that in normal college students the period of least frequency is in the third hour of sleep with more dreaming early and late in the night. In the present group there seems to be a gradual decline in dreaming as morning approaches.

An attempt was made to discover what effect various activities during the day may have on dreams. A daily record was kept of the attendance in school, occupational therapy classes, music classes, and in gymnasium classes. It was also noted whether the children were allowed on the playgrounds, either in the morning or afternoon.

The number of children in each of these activities on a particular day was correlated by the products-moments technic with the dreams recorded the following night. All the coefficients with three exceptions were below 0.4. Of these latter three coefficients two proved to be spurious. The correlation between the total attendance in all activities and non-emotional dreams was $+.441 \pm .1$. This coefficient seems to indicate that the more activity engaged in during the day the more dreaming of an unemotional or indistinct type will occur in these children. The weight of evidence, however, seems to support the conclusion, that in general, there appears to be very little if any connection between the activities engaged in and the frequency of dreams on the following night.

Several incidents occurred which seem to indicate that events which have taken place or are anticipated do have an influence on the *nature* of dreams. For example, one patient talked in her sleep about candy and her mother the night before she expected a visit from her mother who was in the habit of bringing sweets.

Blanchard (2) found no significant relationship between dreams and life age, mental age, and I.Q. However, MacKaye (6) found

some differences in the character of dreams when compared with intelligence.

An attempt was made to discover what relationship existed in these respects in the group under consideration. The correlations in Table II are the result of this attempt.

The fifteen patients for whom the greatest number of dreams were recorded were selected and the rank-difference correlations were computed for I.Q. and life age. The estimated r's were derived by means of the table published by Garrett (4).

Table II indicates that there is a reliable correlation between life age and the frequency of all dreams, as represented by the coefficient of $+.637 \pm .112$. This seems to be somewhat in disagreement with the works of Blanchard, and indicates an increase in dreaming as life age increases between nine and fifteen years.

TABLE II

CORRELATIONS SHOWING RELATIONSHIP BETWEEN I.Q., AGE, AND DREAMING

	Non-Emotional Dreams		Emotional Dreams		All Dreams	
	ρ	Estimated r	ρ	Estimated r	ρ	Estimated r
I.Q.	+.269	$+.282 \pm .195$	+.468	$+.487 \pm .138$	+.142	$+.456 \pm .145$
Age	+.177	$+.188 \pm .201$	+.386	$+.405 \pm .153$	+.621	$+.637 \pm .112$

There also seems to be a reliable positive correlation between the I.Q. and emotional dreams as well as between life age and all dreams.

It has been assumed by a great many that dreaming occurs only during hypnagogic states. Bond (3) has been the most recent advocator of this theory. Our findings do not entirely coincide with his conclusions. The rank-difference correlation between the number of patients awake at various hours of the night and the frequency of dreaming at the same hours is $+.058$, the estimated r being $+.062 \pm .25$. Such a relationship is for all practical purposes zero, and seems to indicate that wakefulness and dreaming are unrelated phenomena—at least in the present group of cases.

It must be borne in mind that the conclusions set forth by Bond are based upon recalled dreams only and are subject to the limitations inherent in the process of recall. The very fact that a dream is recalled makes it one of a selected group. While we are not entirely justified in saying that our findings are a direct contradiction of Bond's conclusions, nevertheless the latter have arisen out of no thoroughgoing statistical treatment of the data and are largely the impressions of a single individual after carefully reading some two hundred dreams of various kinds. How-

ever, differences that may appear in the two sets of data may indicate real differences in the two general types of dreaming, that is, dreams which may or may not be recalled but are accompanied by overt behavior, and those that (so far as we know) are merely recalled.

A tabulation was made of the percentage of dreams reported from the three principal diagnostic groups. It appears that 87.5 per cent of the Post-Encephalitis cases had more than two emotionally colored dreams during the thirty day period whereas only 14 per cent of the Psychopathic group had two or more emotionally colored dreams during the same period. Of the borderline mental deficiency group 40 per cent had more than two such dreams recorded. There may be some sex differences in the latter two groups but the evidence is not great enough to warrant definite statements.

In recent years some discussion of the relation between the waking and dreaming personalities has occupied the attention of writers in this field. F. Pierce (7) has given some evidence that in certain cases the personalities exhibited in dreams were different than in the waking state, while in other cases the reverse is true.

A check list of fifteen pairs of opposite descriptive terms was arranged and submitted to the school teacher, day nurse or attendant, night nurse or attendant, and the physical education teacher for each of the patients for whom three or more dreams were recorded. The instructions were to describe each patient separately by underscoring one or the other term in each pair. We have thus four judgments from individuals who have known each of the patients intimately over a prolonged period.

Some indication of the reliability of this check list was obtained by asking one of the judges to rejudge all the patients approximately a week after making the original record. Out of a total of 285 items, a reversal of judgment was noted on only 35.

On the basis of the combined judgments, each of the twenty patients was placed in one of three categories, namely, aggressive, unaggressive, or mixed type. The classification depended upon merely the number of aggressive or unaggressive traits assigned to a patient and gives no indication of the amount of a particular trait possessed by any one patient.

If we will grant that dreams of anger, commanding, resentment, and boasting are of an aggressive nature, and that dreams of fear, pain, pleading, anxiety and sadness are of an unaggressive

nature, we can easily compare the dreaming and waking personalities in this respect.

In Table III we have recorded the percentages of each type of dream for each personality group. We find that the total percentage of aggressive dreams for the aggressive personalities is 45.2 while only 38.9 per cent of the dreams are of an unaggressive nature.

In considering the unaggressive personalities we find that the percentages of aggressive and unaggressive dreams are 25.2 and 32.3 respectively. The mixed type had 39.4 per cent aggressive dreams and 50.8 unaggressive dreams.

TABLE III

SHOWING RELATIVE PERCENTAGE OF EMOTIONALLY COLORED DREAMS IN THE THREE PERSONALITY GROUPS

Dreams of:	Aggressive	Unaggressive	Mixed
Anger	13.0	10.3	17.2
Commanding	20.5	14.6	14.8
Resentment	9.5	.3	7.2
Boasting	2.2	0.0	0.0
Fear	23.2	19.0	14.4
Pain	9.2	4.0	28.8
Pleading	6.3	8.0	7.2
Anxiety	.2	.3	.4
Sadness	0.0	1.0	0.0
Pleasure	16.6	42.3	10.2
Affection	.2	0.0	0.0

There apparently is some similarity between the waking and dreaming personalities on the basis of aggressiveness and unaggressiveness.

One is forced to admit that dreams are elusive, complex, and extremely difficult to explain. It is well to bear in mind that our conclusions are merely tentative and await further investigation.

CONCLUSIONS

1. That overt motor expressions of dreaming fluctuate in frequency from day to day in the type of children studied.

2. That while the hours of greatest and least frequency vary greatly, in general, there is a gradual decrease in dreaming as morning approaches.

3. That certain unusual events (such as movies) occurring in the evening and accompanied by some loss of sleep act as an inhibiting force of the frequency of dreams.

4. That attendance in any of the usual school, music, occupa-

tional or gymnasium classes or playground activities has little apparent influence on dream activity.

5. That both I.Q. and life age have a positive influence on the frequency of dreams. The relationship is, however, not great.

6. That more cases of Post-Encephalitis dream than either of the other two principal diagnostic groups mentioned.

7. That aggressiveness in dreams tends to occur more frequently in those children judged aggressive than in unaggressive children and *vice versa.*

REFERENCES

1. Berrien, F. K. Recall of Dreams. Jr. Ab. & Soc. Psy., 1930, XXV, p. 113.
2. Blanchard, Phyllis. Motivation of Children's Dreams. Jr. Ab. & Soc. Psy., 1926, XXI, pp. 24–37.
3. Bond, N. B. Psychology of Waking. Jr. Ab. & Soc. Psy., 1929, XXIV, pp. 226–230.
4. Garrett, H. E. Statistics in Psychology and Education. New York: Longmans, Green & Co., 1932, p. 192.
5. Kimmins, C. W. Children's Dreams. Handbook of Child Psychology. Ed. Carl Murchison. Clark University Press, 1931, p. 537.
6. Mackaye, D. L. Recording Emotional Qualities. Psy. Clinic, 1929, XVII, pp. 234–248.
7. Pierce, F. Dreams and Personality. Appleton Co., 1931.

(The author wishes to express his appreciation to Miss Alice Norwood and Mr. H. A. Butterwick for their very excellent work in collecting the data contained herein.)

AN EXPERIMENTAL CLASS DEMONSTRATION OF SUGGESTIBILITY

By WAYLAND F. VAUGHAN
BOSTON UNIVERSITY

THE visual estimation of linear magnitudes was tested by holding before the class sticks of various lengths—15″, 3½″ 50″, 24″, 37″, 14″, 47″, 20″, 31″ and 40″. The sticks were 1⅜″ wide and ¼″ thick. Each stick was grasped by the instructor in the middle with the thumb and forefinger of the right hand and exposed for 15 seconds, then removed from view.

Verbal instruction was offered at the beginning of the experiment to the class of 11 students as follows:

Step 1. "Number 1 to 10 vertically in your notebooks. Ten sticks will be exposed to you, consecutively. You will be given 15 seconds to look at each stick and 5 seconds to consider your estimate of its length and then to write it down next to the appropriate numbers, 1 to 10."

When the 10 sticks had been exposed, verbal instruction was given as follows:

Step 2. "Six sticks of standard lengths will be shown you. You will be informed as to the exact length of each stick when it is submitted. Try to register the way each stick looks and keep it in mind as a standard of comparison. You will be allowed 20 seconds to view each stick."

Sticks 3″, 6″, 12″, 24″, 36″ and 48″ long were then exposed. The 10 original sticks were again exposed as before, prefaced by the following verbal instruction:

Step 3. "The same 10 sticks which were first exposed will be shown to you again, in the same order. Correct your estimates with reference to the standards you have just seen and record your revised estimates in the same order, in the next column."

When this procedure had been completed, the estimates of all the students on each stick were recorded on the front blackboard for Step (1), and then Step (3).

Name	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
I	12	4	48	24	36	10	48	24	36	48	12	3	36	24	36	12	48	18	36	48
II	14	3	60	24	36	12	48	18	30	40	14	3	55	24	36	12	48	18	28	40
III	16	4	60	25	40	12	48	20	32	38	15	3	60	24	30	12	36	20	28	32
IV	12	3	48	24	36	10	40	20	30	48	16	3	54	18	36	12	48	24	42	40
V	14	3½	54	24	42	12	48	24	30	40	14	2½	54	24	40	12	54	20	36	40
VI	14	3½	48	22	36	10	44	16	28	36	15	3	54	24	40	12	48	18	36	42
VII	15	3	48	24	36	12	48	18	30	38	14	2	48	24	36	12	50	20	30	38
VIII	17	3	60	24	40	15	51	24	36	48	15	2	48	24	36	14	48	24	30	40
IX	16	3½	48	25	36	12	45	20	32	40	14	3	48	24	36	12	48	20	34	40
X	14	3	50	24	36	12	42	16	38	39	12	3	48	24	45	12	45	16	30	38
XI	14	4	45	25	36	12	50	24	30	48	14	4	48	26	50	12	50	24	30	38
Correct lengths	15	3½	50	24	37	14	47	20	31	40	15	3½	50	24	37	14	47	20	31	40

The class was then allowed to examine the chart, with the following verbal instruction:

"Study the chart for 5 minutes. You will then be given one more trial estimate on each of the 10 sticks."

Step 4. Stick # 1 was exposed for 15 seconds. Five seconds was allowed for recording the estimate. The instructor then recorded the estimate of each student, in order, on the front blackboard, then paused for 15 seconds to provide an opportunity for each student to observe the column of estimates and thus to compare his own estimate to that of the others in Step (4) and possibly Steps (1) and (3). Sticks # 2 to 10 were then exposed under similar conditions.

The following table includes the data obtained upon the completion of Step (4).

Name	1	2	3	4	5	6	7	8	9	10
I	12	3	64	30	40	14	48	24	48	48
II	14	3	60	25	36	12	48	18	30	40
III	14	3	60	24	36	12	48	20	30	42
IV	12	3	54	18	36	12	48	24	36	42
V	14	3	60	30	40	12	54	20	32	40
VI	14	2½	54	26	42	12	42	18	36	40
VII	14	3	54	24	36	12	48	24	30	40
VIII	15	3	60	24	36	14	48	24	30	48
IX	14	3	55	24	40	13	48	24	34	40
X	12	3	55	24	36	12	48	18	36	42
XI	14	3	50	25	36	12	50	25	30	48
Correct lengths	15	3½	50	24	38	14	47	20	31	40

A careful examination of the figures will show definitely how the estimates became standardized under the influence of the opinions of the others in the group, as Step (4) was carried out.

The members of the class were astonished at their susceptibility to the group influence.

PRELIMINARY REPORT ON AN OBJECTIVE PERSONAL DATA QUESTIONNAIRE

By J. L. McCARTNEY, M.D., and M. J. PAPURT, Ph.D.
ELMIRA REFORMATORY, ELMIRA, NEW YORK

THE history of the movement to prepare and standardize some objective measure of the existence, or non-existence of emotional instability, or of psychoneurotic or psychopathic make-up, is too well known to need any introduction here. Suffice it to say that there is considerable disagreement between certain members of the psychiatric and psychological groups as to the validity of such tests. Trained personnel and their time are both at a premium in prisons, where scientific procedure is just filtering in, and so to expedite matters, this attempt has been made to formulate an objective test of personality.

It will be recalled that in 1918 a serious problem was presented to the administrative and medical officers of the United States Army. Many soldiers had been sent overseas only to become victims of "shell shock" or a war neurosis. The mental hospitals were filled to overflowing with American soldiers of this type. A great need was felt for some measure by which those mentally and nervously unfitted for transportation to the war zone could be discovered before the socially, psychologically and economically unsound practice of actual breakdown occurred.

It was obviously impossible for a psychiatric examination to be given each member of the American Army, as is now equally impossible with the personnel available in most American prisons to thoroughly examine all our prisoners, some 500,000 a year.

The National Research Council was appealed to during the World War and a commission, headed by Professor Woodworth was appointed to study the problem. From this was born the test which has since been variously known as the Woodworth Personal Data Sheet, the Woodworth Psychoneurotic Inventory, and the Woodworth Psychopathic Questionnaire. This test was a list of 116 questions selected for their diagnostic value in determining the presence of various abnormal mental phenomena. Since that time a great many revisions of the original Woodworth have been offered. It was felt by many of these revisors, as in our case, that the Woodworth, while admirably adapted to Army

usage, should be modified for use in other organizations, or for various types of institutional usage.

The study was undertaken at Elmira Reformatory in October 1932, located at Elmira, N. Y. Elmira Reformatory, under the New York State Department of Corrections, is the oldest reformatory in America and has a tradition of scientific interest in the welfare of its inmates. Dr. Frank L. Christian, the superintendent, was active in the psychiatric service of the United States Army during the World War. All inmates at Elmira are males between the ages of 16 and 25 (original commitment) and all have been sentenced on at least one felony or two misdemeanors.

The test was administered as a group test, that is, the necessary instructions were given during the evening meal while all men were assembled in one dining room. The men actually answered the questions asked, however, later that same evening after each had been locked in his cell. The test was not compulsory—that is, only those men who actually were willing to coöperate answered the questions. Two hundred thirty-five questionnaires were thus secured. No selection whatsoever was used except that all obviously facetious responses were thrown out—that is, the entire test was thrown out and not only the particular answer. It was felt that of the 235 finally secured, each was answered honestly, conscientiously, and to the best ability of the individual being tested.

Inasmuch as not all of the 235 inmates answered all of the questions asked, the results have been given in percentages of "pathological", or "wrong" answers rather than in actual number of pathological answers. It was felt that the data thus presented would more clearly show the actual results.

The inmates were assured of complete secrecy because of the confidential nature of their responses. Each inmate was given a code number at the time of administration of the test and only one code list kept by the writers. Inasmuch as it is felt that the inmates had sufficient confidence in the integrity of the examiners, it was again a guarantee that the answers were made honestly.

The questions included in the test, tentatively known as the Elmira Personal Data Sheet were selected upon the basis of diagnostic value, statistical validity, and clarity of meaning of the language used. It is the opinion of the writers corroborated by most workers in the field and by actual contact with men of the Reformatory group that to call a spade a spade is the only valid method of insuring understanding of one's questions. For example, to speak of "masturbation" is scientifically unsound if the

person being asked is unaware of just what masturbation (the word, that is) actually means. It is necessary to use the language of the streets to obtain scientific accuracy, paradoxical as this may sound. To illustrate, the average inmate, or at least a certain significant number are ignorant of just what coitus, copulation, or even the euphemistic "sexual intercourse" actually means. When, however, one uses a street term such as "lay", there is no doubt that the inmate understands clearly what is meant by the question. One cannot, in all clarity, use scientific, or technical terms to a person ignorant of their meaning.

The actual list of questions used in the Elmira Personal Data Sheet are herein presented:

Form I

1. Who do you like best, your mother or father?
2. Who is your favorite actor (man)?
3. How old were you when you began to play with yourself and jerk yourself off?
4. Who is your favorite movie actress (woman)?
5. What is your favorite book?
6. How old were you when you had sexual intercourse and laid your first girl?
7. What do you think is the best book ever written?
8. Who is your favorite story writer?
9. How often do you get a hard-on?
10. Who do you think is the greatest man living today?
11. Who do you think is the greatest woman living today?
12. Do you sleep on your side or on your back?
13. What is your ambition in life—that is, what do you want to be?
14. What is the best moving picture you ever saw?
15. What is the best stage play you ever saw?
16. What game do you like to play the best?
17. Who do you think is the greatest living baseball player?
18. Who do you think is the greatest baseball player that ever lived?
19. What do you think is the greatest act in vaudeville today?
20. What do you like to eat the best?
21. What is your favorite sport or game?
22. Who do you think is the greatest singer that ever lived?
23. What character out of a story that you have read do you think the best?
24. Where do babies come from?
25. How old were you when you found this out?
26. What man would you like to be if you had the chance?
27. Which magazine do you think is the best?
28. What kind of animals do you like the best?

29. What foreign country would you like to visit if you had the chance to visit only one?
30. What state in the U. S. would you like to visit?
31. What trade would you like to learn?
32. Who is the greatest prize fighter that ever lived?
33. Who is the greatest football player that ever lived?
34. How often were you spanked when you were a boy?
35. Who do you think is the greatest President the U. S. ever had?
36. What well-known woman would you like to marry if you had the chance?
37. Do you prefer the Republican or the Democratic party?
38. Would you like to be in the Army or Navy? Which would you join?
39. On what three things would you spend a million dollars if someone gave you the money to spend?
40. Was it right that you were sent here?
41. Did the judge give you a break?
42. Would you rather work than loaf?
43. Do you lie?
44. Do you like to "put something over" on the other fellow?
45. Do you enjoy the company of other fellows?
46. Do you enjoy the company of girls?
47. Do you worry much about little things?
48. Are you anxious to please others?
49. Do you like to stall around and waste time?
50. Did the teachers at school treat you right?
51. Do you think your last boss gave you a fair break?
52. Are you interested in religion?
53. Are you a "good-time Charlie"?
54. Are you stuck on yourself?
55. Are you afraid to be called "yellow"?
56. Do you like to be bossed around?
57. Are you anxious to please other people?
58. Do you think you love your mother too much for your own good?
59. Are you dependent upon your father for advice?
60. Are you naturally a talker?
61. Do you waste much time in day-dreaming?
62. Do you ever get sick of your family and friends?
63. As a child, did you like to play alone better than with other children?
64. Are you bashful with girls?
65. Do you feel bashful with fellows?
66. Do you like to go to new places?
67. Do you usually feel all right?
68. Are you often scared in the middle of the night?
69. Do you feel like you are falling when going to sleep?
70. Does your heart ever beat in your ears so that you can't sleep?
71. Do you feel all right when you get up in the morning?

72. Do you ever feel dizzy or sick to your stomach?
73. Do you ever feel like you can't catch your breath?
74. Does your face itch for a long while at a time?
75. Have you ever felt an awful pressure in your head?
76. Does your head ever ache on one side?
77. Have you ever fainted?
78. Do you ever have dizzy spells?
79. Did other children ever let you play with them when you were young?
80. Have you ever run away from home?
81. Has your family always treated you right?
82. Do you think your father treats your mother right?
83. Do people pick on you more than you deserve?
84. Do you think you drank too much?
85. Do you think you have ever smoked too much?
86. Have you ever taken "dope"?
87. Do you get used to new places easily?
88. Do you have any trouble walking in the dark?
89. Have you ever felt as though someone were making you do something against your will?
90. Have you ever seen a ghost or a vision?
91. Do you think people watch you on the street?
92. Does it make you uneasy to be in a big crowd?
93. Are you afraid to go in tunnels or dark places?
94. Do you know of anybody who is trying to do you harm?
95. Do you dislike going on a high bridge to cross a river?
96. Are you afraid of water?
97. Have you ever been afraid of going crazy?
98. Would you rather be alone than with other people?
99. Are you selfish?
100. Do you make friends easily?
101. Are you shy or bashful?
102. Do you have a lot of friends?
103. Are you bull-headed or stubborn?
104. Do you always try to get even when someone does you wrong?
105. Do you get tired very easily?
106. Can you stand being kidded?
107. Are you often down-hearted and blue?
108. Do you feel happy most of the time?
109. Is it easy to get your goat?
110. Is it easy to make you laugh?
111. Are you married or do you ever plan on getting married?
112. Do you worry too much?
113. Do you plan to have children when you are married?
114. Do you think that marriage is the bunk?
115. Are you usually grouchy?
116. Do you think you have good common sense?

117 Do you like to see other people get punished?
118. Do you have too many aches and pains?
119. Do you think you have enough ambition?
120. Can you stand the sight of blood?
121. Are you always afraid of getting hurt?
122. Are you afraid of the dark?
123. Can you stand pain quietly?
124. Do you blush easily?
125. Have you ever been paralyzed in an arm or leg?
126. Have you ever been blind or half blind for a time?
127. Can you stand rotten smells?
128. Does your food disagree with you?
129. Do you think you have the stomach ache too often?
130. Did you ever have the habit of twitching your face, neck, or shoulders?
131. Do you often have chills or fevers?
132. Does it bother you to have others watch you work?
133. Do you ever have a strong desire to set fire to something?
134. Do you usually know just what you want to do next?
135. Do you get rattled easy?
136. Can you sit still without squirming?
137. Did you ever have the habit of stuttering or stammering?
138. Do your feelings keep changing from sad to happy, and from happy to sad, without any good reason?
139. Did you ever have fits or convulsions?
140. Do you get too many ideas for your own good?
141. Do you feel tired most of the time?
142. Did you ever lose your memory?
143. Do you have too much trouble in making up your mind?
144. Are you afraid of being burned to death?
145. Did you ever have the habit of wetting the bed?
146. Did you ever feel like killing yourself?
147. Did you ever feel like killing somebody else?
148. Do you dream every night?
149. Are you afraid of touching yourself?
150. Do you like school?
151. Do you really think that you will be able to keep out of trouble when you leave the reformatory?
152. Did you ever try to bunghole a boy?
153. Has anybody ever tried to do it to you?
154. Do you know the difference between a man and a woman?
155. Do you like animals?
156. Do you like to go to church?
157. Were you ever spanked?
158. Do you like to go around without your clothes on?
159. Do you like to look in the mirror?
160. Do you like to wear bright ties?

161. Do you like to wear flashy clothes?
162. Do you think you are as smart as the other inmates?
163. Do you think that your parents gave you a break?
164. Would you run away if you had a chance?

The reader may judge for himself as to the validity of the questions used. Questions 1 to 39 inclusive were not actually of part of the Personal Data Sheet but were used in order to obtain the reactions of the inmates to some interesting questions. The first three choices of the inmates, by vote, are presented in Chart P. D. and are given for what they are worth, with no claims for

CHART P.D.

Question	First	Second	Third
1.	Mother	Both	Father
2.	John Barrymore		
	Richard Dix	George Arliss	L. Barrymore
3.	13.3 Average		
4.	Jean Harlow	Greta Garbo	Clara Bow
5.	Bible	Western Stories	History
6.	15.7 Average		
7.	Bible	Covered Wagon	All Quiet on the Western Front
8.	Zane Grey	Edgar Burroughs	Sinclair Lewis
9.	Every day		
10.	Henry Ford	Lindbergh	Einstein
11.	Mother	Amelia Earhart	Madame Curie
12.	Side	Back	Stomach
13.	Business Man		
	Aviator	Mechanic	Engineer
14.	Wings	The Big Parade	Ben Hur
15.	Green Pastures	Uncle Tom's Cabin	The Gorilla
16.	Baseball	Football	Basketball
17.	Babe Ruth	Gehrig	Ty Cobb—Martin
18.	Babe Ruth	Ty Cobb	C. Mathewson
19.	Kate Smith	Weber & Fields	Boswell Sisters
20.	Vegetables	Meats	Fruits
21.	Baseball	Football	Swimming
22.	E. Caruso	McCormack	Al Jolson
23.	The Hero	The Detective	Philo Vance
24.	Womb of Women	Women	Mothers
25.	14.1 Average		
26.	Myself	Lindbergh	Ford
27.	Liberty	Saturday Eve. Post	Cosmopolitan
28.	Dogs	Horses	Cats
29.	France	Italy	Germany
30.	California	Texas	Florida
31.	Mechanic	Barber	Printer
32.	Dempsey		
	Sullivan	Corbett	Johnson
33.	Red Grange	Knute Rockne	Jim Thorpe
34.	Seldom		
35.	Lincoln	Washington	Wilson
36.	The One I Love	Jean Harlow	Joan Crawford
			Jane Addams
37.	Democratic	Republican	Impartial
38.	Navy	Army	None
39.	Home	Charity	Business

statistical or diagnotic validity, but merely for the interest of the reader. It is in questions 40 to 164 inclusive that our interest mainly lies.

The obvious question upon the part of the reader at this point is, "Just how was it determined as to whether the affirmative or negative response was the pathological response?" This was done by ordinary psychiatric procedure. For example, it is fairly obvious that to answer "Yes" to Question 90 "Have you ever seen a ghost or a vision?" would be pathological. On the other hand, it is almost impossible to determine by this method which response to a question such as No. 48, "Are you anxious to please others?" would be considered pathological. For this reason, questions such as No. 48 were thrown out in the final form presented at the end of this paper.

Before presenting the composite tables of the mean, median, and mode of the two types of classifications used, the psychiatric and the administrative, it might prove helpful to make brief mention of the significance of these classifications as used by the New York State Department of Correction.

There are four different types of administrative classifications possible and each is to be distinguished characteristically by its title. "Temporary restricted" means that the prisoner under consideration should be incarcerated only a comparatively short period of time; that he is not likely to cause any trouble during the period of his incarceration, and that on the whole he is a fairly trustworthy individual.

"Prolonged tractable" means that the man under consideration is much like the temporary restricted type in personal make-up but, because of the nature of his crime, his sentence, or his past history, it would be best to keep him confined for a long period of time.

"The "prolonged intractable" should be kept for a very long period of time, is usually a recidivist, and is in all probability a potential trouble-maker who is apt to be vicious and quarrelsome. It is this latter type of prisoner that is responsible for most of the disturbances in our prisons.

The "observation" inmate may be of any of the three types mentioned above, except that for some reason considered sound, he should be kept under close observation usually at the institutional hospital. Perhaps he is potentially psychotic—perhaps he is only suspected of being a tubercular. The latter classification is not as significant as the first three inasmuch as it may include some one who might otherwise be classified under any of the first

three—temporary restricted, prolonged tractable, or prolonged intractable.

The psychiatric classifications are just what their name connotes—the normal, the feebleminded, potentially psychotic, etc. Obviously there is some overlapping between the administrative and the psychiatric classifications. For example, the administratively temporary restricted is usually also the psychiatrically "normal". The prolonged intractable is usually psychiatrically psychopathic, feebleminded, or actually psychotic.

In each of our cases, the classifications were made by the two Reformatory psychiatrists. The validity of our study is, of course based upon the validity of diagnosis. However, it is impossible to use any other method of determining, for example, the existence of a psychosis other than by the diagnosis by a competent psychiatrist. The personal element cannot, by the very nature of the problem, be ruled out. However, the diagnoses were made prior to this study and with no knowledge that they would be used as a check of an objective measure.

It will be noticed by an examination of the tables presented above that the mean, median, and mode has been presented for each possible classification, and that the permutations have also been presented in terms in each case of percentage of pathological answers. The number of cases in each permutation has also been presented. In addition, certain other relevant material such as religion, ancestry, number of arrests, marital status, and offense for which committed has also been presented.

It is significant, for example, that the temporary restricted have the lowest percentage of pathological answers, that the prolonged tractable is second, and that the prolonged intractable have the highest percentage of pathological answers. This, obviously, argues well for the validity of the Personal Data Sheet.

Again, under classification, it is highly significant that the 23 psychopaths had a higher percentage of pathological answers than any other group under the temporary restricted heading and also under the general psychiatric classification heading if one excludes such diagnoses as post encephalitis for example of which there were only two cases, or "drug addict" of which there was only one case. In other words, the psychopath consistently has a high percentage of pathological answers.

The religious aspect of the situation is interesting, but surprising in results. The Jews have the lowest percentage of pathological answers with the Catholic second and the Protestant third. One would expect the Hebrew to have a high percentage

TABLE I

Classification	Mean	Med.	Mode	
ADMINISTRATIVE C.				
Tem. Restricted 136	.135	.109	.088	.08
Pro. Tractable 11	.183	.144		.13
Pro. Intractable 71	.217	.189		.14
Observation 17	.204	.178		.136
PSYCHIATRIC C.				
I—Normal 87	.114	.093	.088	.08
II—Feebleminded 11	.210	.160	all	.16
a. Borderl DN 20	.143	.120	.088	.08
III—a. Psychopath. 89	.205	.192	.232	.23
c. Post Encep. 2	.266	.266	all	....
c. Drug Addict 1	.320	.320	.320	
d. Alcoholic 1	.123	.123	.123	
Traumatic 2	.225	.225	all	
g. Neuropath. 6	.258	.220	all	
IV—Pot. Psychotic 14	.201	.160	.136	
RELIGION				
Hebrew 22	.161	.154	.156	
Catholic 96	.166	.140	.088	.08
Protestant 104	.169	.146		.08

Classification	Mean	Med.	Mode	
TEM. RESTRICTED				
				.07
Normal 84	.114	.096	.088	.08
				.08
Feebleminded 5	.110	.088	all	.16
Dull Normal 17	.140	.088	.088	.08
			.232	.14
Psychopathic 23	.197	.184	.264	.23
Neuropathic 3	.179	.128	all	
Post Encep. 1	.222	.222	.222	
PRO. TRACTABLE				
Normal 1	.128	.128	.128	
Psychopath 7	.186	.209	.224	
Post Encep. 1	.310	.310	.310	
PRO. INTRACTABLE				
Normal 1	.086	.086	.086	
Feebleminded 6	.295	.204	all	.14
Dull Normal 2	.172	.172	all	
Psychopathic 56	.211	.192	.232	
Alcoholic 1	.123	.123	.123	
Neuropath. 2	.321	.321	all	
Pot. Psychotic 3	.208	.128	all	
OBSERVATION				
Normal 1	.156	.156	.156	
Dull Normal 1	.144	.144	.144	
Psychopath. 2	.213	.213	all	
Drug Addict 1	.320	.320	.320	
Traumatic 2	.275	.275	all	
Neuropath. 1	.372	.372	.372	
Pot. Psychotic 10	.167	.160	.136	

TABLE II

TABLE II

Classification	Mean	Med.	Mode
ANCESTRY			
Indian 3	.336	.337	all
Lithuanian 2	.324	.324	all
Negro 10	.255	.193	.178 .17
Polish 9	.210	.144	all .14
French 6	.208	.186	all
Spanish 3	.188	.192	all
Russian 18	.179	.171	.156
German 24	.170	.163	.232 .23
Austrian 3	.165	.144	all
Greeks 2	.156	.156	all
Italian 28	.151	.134	.088 .08
			.05
English 28	.151	.133	.14
Roumanian 2	.148	.148	all
Irish 27	.143	.104	.08
Scotch 4	.140	.142	all
			.08
American 28	.132	.121	.112 .11
Dutch 4	.126	.130	all
Hungarian 3	.046	.042	all
Canadian 1	.200	.200	.200
Portugese 1	.176	.176	.176
English-Dutch 1	.172	.172	.172
French-German 1	.163	.163	.163
Porto Rican 1	.157	.157	.157
Scotch-Irish 1	.136	.136	.136
Slavish 1	.123	.123	.123
French-English 1	.137	.137	.137
Mexican 1	.100	.100	.100
German-Irish 1	.088	.088	.088
Dutch-Irish 1	.084	.084	.084

Classification	Mean	Med.	Mode
NO. OF ARRESTS			
One 78	.164	.145	.114 .08
			.128
Two 58	.176	.156	.192 .12
Three 32	.134	.106	.072 .07
Four 23	.144	.144	.088 .08
Five 14	.139	.135	all
Six 11	.190	.176	.232 .23
Seven 2	.117	.117	all
Eight 2	.098	.098	all
Nine 4	.161	.157	all .12
Ten 1	.417	.417	.417
Twenty 1	.520	.520	.520
MARITAL STATUS			
			.144
Single 202	.170	.144	.088 .08
Married 27	.157	.130	.088 .08
OFFENSE			
			.144
Robbery 58	.152	.144	.088 .08
Burglary 40	.148	.138	.136 .13
			.08
Grand Larceny 21	.185	.165	.088 .17
			.10
Vio. Prob. 15	.125	.130	all .14
Forgery 11	.176	.196	all .08
Petit Larceny 11	.218	.195	all .19
Sullivan Law 5	.118	.140	.156 .15
Assault 3	.245	.224	all
Misdemeanor 2	.112	.112	all
Rape 2	.142	.142	all
Unlawful Entry 2	.122	.122	all
Narcotics 1	.305	.305	.305
Shoplifting 1	.160	.160	.160
Jailbreak 1	.084	.084	.084
Incest 1	.112	.112	.112
Suspicion 1	.328	.328	.328
Blackmail 1	.110	.110	.110
Extortion 1	.224	.224	.224

of pathological answers in consideration of the well-substantiated instability of his nervous and mental control. The factors entering here probably are due to the character of the Catholic and Protestant stock which gives the Jew, by comparison the lowest percentage. The vast majority of Catholics at Elmira Reformatory are second generation Italians, notoriously an unstable group. Again, contributing to the high percentage of pathological answers of the Protestant is the fact that more than any other group, the Elmira Protestants are Negro, again an unstable group. The opinion is hazarded that, were this test to be given to an equally unselected group of non-penal individuals, the religious factor would be somewhat different.

In the nationality group, the Hungarians are the least unstable with the Scotch and Irish following closely, the Negro and the Indian with the highest percentage of the larger groups. It should be noted that in the matter of nationality as well as in most other particulars, too few cases are presented to make the results statistically sound. However, in spite of this, much of the information presented is of interest as showing significant detailed differences.

Insofar as the number of arrests is concerned, we have five major groups in exact accordance with the individuals mentioned. Those men with three arrests have, surprisingly, the lowest percentage. Those with one arrest are third to those with four arrests who are second. The results here are perhaps invalidated by the age of all the inmates and concurrent chronological inability to have gotten into many serious difficulties with the law. A study of Sing Sing inmates would perhaps be more significant insofar as this particular point is concerned.

Grist for the humorist's mill is the fact that the married men far outstrip the single men in percentage of pathological answers. As one individual had remarked, "it isn't necessary that one be crazy in order to get married, but it certainly helps a lot".

Of the major groups under types of arrest, the petit larceny group is the highest. This is perhaps to be expected as the petty thief is usually a constitutional inferior, highly unstable. The grand larceny artist, who is usually an automobile thief is also high. Again we have the inferior who usually steals the automobile to impress some female with his masculine glory. Unable to do so by his physical attributes, he resort to flashy clothes and stolen automobiles.

A CASE OF ANTEROGRADE AMNESIA

By HULSEY CASON
UNIVERSITY OF WISCONSIN

THE present case of what is generally referred to as anterograde amnesia is being described because a much more accurate and detailed account of the case was obtained than is generally possible. I was the subject of the localized amnesia, which resulted from a fall on the ice while I was skating. A good witness observed my behavior closely for some time after I fell and throughout most of the period of time for which I later had a complete loss of conscious memory. The details of the case were as follows:

At about ten minutes after 3 P.M. on December 19, 1932, I went alone to skate on the lagoons in Vilas Park, Madison, Wisconsin; and after skating alone some 15 minutes I met Mr. David Leiser who had been a friend of mine for about a year and who was at that time a Junior in the University of Wisconsin. We had been skating together about 25 minutes when, in trying to learn what was for me a new way to turn a sharp curve, I fell hard and struck my left zygomaticum (malar or cheek) bone on the ice, and after this fall I remained unconscious for 3 or 4 minutes. D. L. was with me at the time, and when I got up he noticed that my behavior and speech were somewhat abnormal and he remained with me and noted the details of my behavior closely until I left the lagoon.

According to data furnished by the United States Weather Bureau at Madison, Wisconsin, in regard to weather conditions prevailing in Madison on December 19, 1932, some smoke was observed over the city at 4:15 P.M., the atmosphere was clear when the sun set at 4:26 P.M., it was dark enough so that those driving automobiles needed headlights at 4:45 P.M., and it was entirely dark at 5:00 P.M. The temperature was 29° F. at 3:00 P.M., 29 at 4:00 P.M., and 26 at 5:00 P.M. The period of twilight is quite short in Madison at this time of the year.

When I regained something like normal consciousness after falling on the ice, I was driving my car, and was slightly more than half a mile from the lagoon, going in the right direction along the shortest and entirely familiar route through the residential

section of the city to my home which was located 1.4 miles from the lagoon at 2117 Kendall Ave. I was surprised to notice that to all appearances it had suddenly become fairly dark. I felt dizzy and peculiar, and was conscious of the somewhat painful swelling on my face. The last time I remembered skating (at about 3:58 P.M.) it was clear, and now (at about 4:46 P.M.) it was dark. I now realized that I did not remember leaving the ice, taking off my skates, putting on my shoes, and driving away in my car.

I reached home at approximately 4:49 P.M., and at about 8:30 P.M. I telephoned Mr. Leiser and asked him how I fell, what I had done, what I had said, etc. I knew that I had had a hard fall on the ice, but I was surprised when D. L. described some of the circumstances of my falling and enumerated several incidents which were quite clear to him but which I could not remember at all. I then realized more clearly the general nature of my loss of memory, and I asked D. L. to write out, just as soon as he could, a complete and accurate account of all of the details of the accident, and all of the details of my behavior which he observed after I fell. D. L. promptly wrote out a careful account of these matters, and I feel that his account is highly reliable. His complete account exactly as he wrote it out and gave it to me is as follows:

"On Dec. 19, 1932, I met X [Hulsey Cason] skating on the lagoon at Vilas Park. X and I skated back and forth on the big lagoon for a while and then, at my suggestion, we skated over to another part of the lagoon. X was practicing turning curves. All of a sudden, as X started to take a stroke forward, the tip of his skate caught in the ice and he lunged forward. X turned his head to the right just before he hit the ice. Apparently the suddenness of his fall kept him from throwing his arms out in front of himself, and as a result he lit on his face, the force of the impact knocking him out."

"Immediately I skated over to him and asked, 'Are you hurt?'"

"X did not reply; he lay motionless on his stomach, his arms at his sides. I became somewhat alarmed and proceeded to rub snow on his temples so as to revive him. After several minutes X startled me by turning over on his back, taking half a dozen very short and deep gasps and emitting saliva from his mouth. After this he opened his eyes, smiled at me and said, 'Hello'. X slowly raised himself to a sitting posture, but he was only able to hold it for about ten seconds. He lay down on his back, groaned several times and turned over. After resting for several minutes he got up on his feet with my help."

"I said, 'Did you hurt yourself?'"

"'No', replied X, 'I only feel a little dizzy.'"

"I said, 'We will skate over to the boat landing and rest for a while.'"

"X did not answer as if he had not heard me. We skated very slowly

toward the boat landing. X seemed to be more dizzy than he admitted, and I grabbed him twice when he looked as though he was about to fall. I told him that I would take hold of his arm and help him, but X replied, 'I don't need any help. I feel quite all right. I was only dizzy. I feel much better now.' When we got to the boat landing X made no attempt to sit down. I said 'X, you must sit down and rest for a while.' "

"X replied, 'I feel better. My dizziness is over. I think I should go home.' "

"After we had skated under the bridge into the large lagoon, I exclaimed, 'You have a little blood on your left cheek where you hit the ice.' "

" 'Just exactly how did I fall', said X while he felt of his cheek. I told him."

" 'Is there much of a swelling?', said X."

" 'No, not much', I replied. We skated about ten feet when X burst out, 'Will you tell me just exactly how I fell?' I told him."

" 'There is quite a swelling on my cheek, isn't there?', said X."

" 'It is not big', I stated. After skating up to the end of the lagoon X turned to me and said, 'There is quite a bump on my cheek; is it swollen much?' "

"I answered, 'No, it is hardly noticeable.' X continued, 'It feels as if there is quite a swelling. Will you tell me just exactly how I fell.' I told him."

"I skated back and forth and around the lagoon. X stood still watching me. When I returned he said, 'You certainly skate well. You must have learned how when you were a child. You probably learned to skate as soon as you could walk. You learned at the age of three, didn't you?' I replied that I did not learn to skate until I was nine years old. I thought that X's reply of three years was rather absurd."

"X skated slowly, not with his arms in back of him as he had formerly done, but with them swinging at his side. Gradually X increased his speed while he practiced turning to the left and right with his arms held out in the opposite direction, like I had shown him. I thought it rather funny that he should attempt to skate as fast as he did after he had suffered such a shock when he had struck his head on the ice. In fact, he skated faster and executed the curves with greater skill than he had done before his fall. I asked him if he was going to skate again, after having suffered such a shock. He said, 'I should say so. I will not let a little thing like that keep me from skating.' I thought it rather funny that he did not go home, because he had stated several times, 'I think I should go home.' "

"I skated around for about twenty minutes, and X still continued to skate. I skated across the big lagoon and when I skated back I saw X sitting in his car taking off his skates. I did not see X get into his car, but I saw him drive away."

When I reached home (at about 4:49 P.M.) I could clearly remember everything that occurred up to within a few seconds or at most probably only one or two minutes before I fell (at about 3:59 P.M.), but I had no memory whatever of falling or of the circumstances of falling, no conscious memory of the incidents in D.L.'s account from about 3:59 P.M. when I fell, to about 4:42 P.M. when I drove away. I had no conscious memory of getting in my car, taking off my skates, putting on my shoes, starting the car, and driving at least half a mile. At about 8:30 P.M., when D. L. described over the telephone the incidents which he later included in his written account, I also did not have any recognition memory of these incidents. I did not feel entirely normal while I was recovering from the shock for two or three days after the accident, and I am certain that the localized amnesia continued during this period. I am inclined to believe that my loss of conscious memory for the actual incidents themselves persists to the present time, but I cannot be at all certain that this belief is correct.

At about 9:00 P.M. on the day of the accident, or some five hours after the accident occurred, I was given a neurological examination by Dr. Frank L. Weston of Madison, and he found that my reflexes were normal in every way.

This is the only abnormal memory experience that I have ever had. At the time of the accident, my age was thirty-nine years and ten months; my weight was about 205 pounds; I was healthy in every way and quite strong; and I did not use drugs in any form. My height is slightly more than 6 feet. I had never attempted to skate on the ice before December, 1930, but I went skating about 15 times during the winters of 1930-1931, 1931-1932, and December, 1932. In my short but intensive experience I had fallen frequently and had struck my head on the ice quite hard about five times. I had attempted to acquire the delicate art of skating too late in life, but the protection of my head against injury was so unpredictable that I have not yet renewed efforts to become moderately proficient in this sport.

WILLIAM JAMES AND PSYCHICAL RESEARCH *

By MAURICE BAUM
KENT STATE COLLEGE, KENT, OHIO

OF all the departments of thought and activity in which William James engaged, that of psychical research seems to have produced the most negligible scientific results. Perhaps for this very reason his long devotion to it [1] always appeared an anomalous fact, which could be explained only as one of those idiosyncrasies to which all men of genius are prone.

Among the more technical critics of his works, however, this very venture into the field of the supernatural seemed to indicate a regrettable flaw in his scientific integrity. Indeed many have not hesitated to classify James's attitude toward psychical research with that in the "Will to Believe", and to denounce both as unpardonable aberrations of a great mind. Today a doubt still lingers in the ranks of the most loyal of his followers as to whether his singular interest in this field was merely the indulgence of a harmless hobby or the indication of a genuine scientific interest in a religion considered *tabu* by all orthodox scientists.

A survey of the numerous contributions which James made for a period of more than a quarter of a century to this branch of research, reveals that his interest in it was as genuine and profound as it was cautious and scrupulous in character.

A close study of this material reveals two important facts: James undertook the study of psychical phenomena because they represented a part of human experience which, although the most treasured intrinsically, remained the most despised scientifically [2]; he likewise believed, from the very beginning of his interest in this subject, that only a true scientific attitude and

* Received and acknowledged November 24, 1933.

[1] "The English Society for Psychical Research had been founded in 1882. In 1884 James became a corresponding member and concerned himself actively in organizing an American society of the same name in Boston. He made contributions to the 'Proceedings' of this society during the six years of its existence; and, when it amalgamated with the English Society in 1890, he became a Vice-President of the latter. With the exception of a term during which he served as its President (1894–95), he continued to be Vice-President of the S.P.R. until his death, and occasionally published through its 'Proceedings' ". From the "Letters of William James", Vol. I, p. 227. James himself has stated that for twenty-five years he was interested in this field of research. Cf. "Final Impressions of a Psychical Researcher" in "Memories and Studies".

[2] Cf. "Sargent's 'Planchette' ", reprinted in "Collected Essays and Reviews", p. 2.

method were capable—if anything at all was capable—of resolving the mystery.[3] His father's devotion to Swedenborgian mysticism and James's professional interest as a psychologist in all fields of human experience, had awakened his curiosity in the intellectual possibilities of the subject as early as 1869.[4] Had this interest been purely sentimental, he would never have insisted so emphatically and continuously upon the use of as cold and ruthless a method of investigation as that of scientific technique; he would have leaped to embrace any evidence or dogmatic revelations which promised to assuage his spiritual thirst. Thus he wrote to his father in 1882, when he heard that the latter was dying, "As for the other side, and Mother, and our all possibly meeting, I *can't* say anything. More than ever at this moment do I feel that if that *were* true, all would be solved and justified. And it comes strangely over me in bidding you good-bye how a life is but a day and expresses mainly but a single note. It is so much like the act of bidding an ordinary good-night. Good-night, my sacred old Father! If I don't see you again—Farewell! a blessed farewell!"[5] Two years later he penned the following words after the death of his own infant son, Hermann: "He was a broad, generous, patient little nature with a noble head, who would doubtless have done credit to his name had he lived. It *must* be now that he is reserved for some still better chance than that, and that we shall in some way come into his presence again."[6] Yet James spent much time during his remaining active years vainly seeking for the scientific evidence which would provide concrete support for so precious a hope.

The employment of the scientific attitude and method in this field involved, James declared, the following requirements: first,

[3] Cf. ibid., p. 2; also, his review of "Lang's 'Cock-Lane and Common Sense' and du Prel's, 'Die Entdeckung der Seele durch die Geheimwissenschaften'", Psychol. Review, Vol. 1, pp. 630–632. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888. "What Psychical Research Has Accomplished" in "The Will To Believe and other Essays in Popular Philosophy"; "Final Impressions of a Psychical Researcher" in "Memories and Studies", and "Letters", Vol. I, p. 248.

[4] Cf. "Sargent's 'Planchette', Boston Daily Advertiser, March 10, 1869. Sir Oliver Lodge's impression of James's interest in psychical research, is worth recording in this connection. "I also met William James of Harvard", he writes in his autobiography, "Past Years", "a most attractive person, who visited me later at Mariemont, and to whom we owed the discovery of Mrs. Piper. He was keenly interested in psychical research, but never shared to the full Myers's enthusiasm for all it might mean to the world; he seemed to regard it rather in a cold-blooded manner as a branch of psychology" . . . (op. cit., p. 291. No year is indicated for this meeting. I am indebted to Dr. Eleanor Bisbee for calling my attention to this passage.)

[5] "Letters", Vol. I, p. 220.

[6] Quoted in Julius Bixler's "Religion in the Philosophy of William James", p. 160. Cf. letters in ibid., pp. 156, 161, 163; also "Memories and Studies", p. 72.

no final decision should be made before all the pertinent and available facts had been carefully tested and organized into a coherent whole [7]; secondly, prior personal attitudes regarding the evidence must be strictly eliminated.[8] The investigation, in other words, should be conducted with no more and no less emotion than that which accompanies any chemical or biological experiment.

In this field of research, as in all other possible fields of scientific investigation, James recognized three levels of explanation: the descriptive, the empirical, and the truly causal. The first level embraced accurate description of facts, their measurement and arrangement in some intelligible order; the second level included the statement of all observed uniformities or sequences of behavior in the case of the phenomena observed; and the third level presented true causal relations which could be experimentally verified and made fruitful in practical application.

As regards psychical research, James found even the first level of explanation most difficult to attain. As early as 1869 [9] and as late as 1909,[10] he complained that too much of the proffered evi-

[7] Cf. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888. James's letters to friends written at the time that he was actively interested in furthering the formation of an American branch of the English Society for Psychical Research, likewise illustrate this demand. To his friend Thomas Davidson, for example, he wrote in 1885, "For I take it the urgent thing, to rescue us from the present disgraceful condition, is to ascertain in a manner so thorough as to constitute *evidence* that will be accepted by outsiders, just what the *phenomenal conditions* of certain concrete phenomenal occurrences are. Not till that is done can spiritualistic or anti-spiritualistic theories be ever mooted." (Cf. the whole letter quoted in Bixler's "Religion in the Philosophy of William James", pp. 146–147). The same conviction was repeated twenty-four years later. Cf. "Final Impressions of a Psychical Researcher" in "Memories and Studies".

[8] For a strong statement of this conviction, see James's severe criticism of the editor of "Science" for his high-handed treatment of Hodgson's report on Mrs. Piper. Cf. "Mrs. Piper, the Medium", Science, N. S., Vol. 7, pp. 640–641. In a letter to Carl Stumpf, dated Jan. 1, 1886, he wrote, "I don't know whether you have heard of the London 'Society for Psychical Research', which is seriously and laboriously investigating all sorts of 'supernatural' matters, clairvoyance, apparitions, etc. I don't know what you think of such work; but I think the present condition of opinion regarding it is scandalous, there being a mass of testimony, or apparent testimony, about such things, at which the only men capable of critical judgment—men of scientific education—will not even look. . . . It is a field in which the sources of deception are extremely numerous. But I believe there is no source of deception in the investigation of nature which can compare with a fixed belief that certain kinds of phenomena are *impossible*." ("Letters", Vol. 1, p. 248). As early as 1869, however, James had pleaded for the elimination of emotional attitudes toward the solution of the problem because they were basically irrelevant to the ascertainment of the facts on which alone a dependable decision could be made. Cf. his review of Sargent's "Planchette", reprinted in part in "Collected Essays and Reviews", and Boston Daily Advertiser, Mar. 10, 1869. As examples of intolerance toward all psychical research, James later cited the behavior of some of his professional colleagues at Harvard and other learned acquaintances elsewhere. Cf. "Frederic Myers's Services to Psychology" reprinted in "Memories and Studies".

[9] Cf. his review of Sargent's "Planchette", Boston Daily Advertiser, March 10, 1869.

[10] Cf. "Report on Mrs. Piper's Hodgson-Control", Proc. of the Amer. Soc. for Psychical Research, Vol. 3, pp. 470–589.

dence was second-hand, suspicious in origin and uncertain in nature. The complexity of the factors operative in any séance,—for example, the moral character of the medium and the sitter, and the prior relations of the two to each other, etc.—made the bare ascertainment of fact itself exceedingly difficult. James, himself, went to extraordinary pains to eliminate all inferences from the facts in order to see them in their naked simplicity. Hence he repeatedly asserted that only when mediums could be isolated and studied scientifically over a long period of time, could the facts themselves be accurately observed and described.[11]

But granting the attainment of this level, which James believed was more easily possible in the case of telepathy than in the case of mediumship, there remained the almost insuperable difficulty of ascertaining the empirical uniformities without which all science perishes for lack of clues. Telepathic experiments might be repeated, although seldom with the same participants or under exactly identical conditions; but the repetition of medium experiences was impossible in the very nature of the case, since the other party to the transaction ("the control" or "spirit") could not be arbitrarily summoned and manipulated. Similarly in the case of veridical hallucinations, the facts could not be reproduced in part or whole since the events which had transpired were beyond recall. James therefore sought the aid of the statistical method to overcome this deficiency.[12] In his collection, analysis, and interpretation of the statistical data on hallucinations, he displayed an astounding amount of patience and critical acumen which should evoke only the highest respect of all those familiar with the difficulties involved in the handling of similar treacherous and unwieldy material.[13] When it is realized that James himself knew that there was neither fame nor fortune in such an undertaking, and that, on the contrary, he was inviting the severest ridicule of friends and colleagues alike, however positive his results, some just appreciation of his devotion to this thankless task may dawn upon his many unfriendly critics.

One follows with admiration his numerous and painstaking

[11] Cf. "Report of the Committee on Mediumistic Phenomena", Proc. of the Amer. Soc. for Psychical Research, Vol. 2, pp. 102–106; "Notes on Automatic Writing", ibid., Vol. 2, pp. 548–564; and "Letter Regarding Endowment for Research into Mediumship", Proc. of the Amer. Soc. for Psychical Research, Vol. I, Part 1, pp. 33–34. (Not listed in the "Annotated Bibliography".)

[12] Cf. "Letter to the 'American Journal of Psychology' on the Projected Census of Hallucinations", Amer. Jour. of Psychol., Vol. 3, p. 292.

[13] Cf. "Review of the 'Report on the Census of Hallucinations'", Psychol. Rev., Vol. 2, pp. 69–75, and "A Correction (Note on Hallucination Census)", Psychol. Rev., Vol. 2, p. 174.

analyses of the census statistics on hallucinations, and his constant repudiation of all hasty and biased attacks upon the results.[14] His spirited yet accurate criticisms of Messrs. Lehmann and Hansen, and Titchener for their erroneous interpretations and judgments of the data regarding telepathy, likewise afford excellent illustrations of his impartiality and single-minded devotion to truth for its own sake in this field.[15] He would tolerate no slipshod handling of the results of others or of himself in such a branch of investigation, and he demanded absolute fairness in the treatment of all interpretations attained.[16] If on some occasions his resentment flamed high against the critics of psychical research, it must be remembered that it was always because he had good cause to reject the spurious judgments of the prejudiced and misinformed.

Finally, in his attempt to attain the third level of explanation in psychical research, James freely acknowledged the purely speculative nature of the enterprise, due to the present impossibility of exhibiting a truly scientific cause at work. On this level, hypotheses were in order, and the degree of belief to be accorded to each, *certeris paribus*, must be determined, he confessed, by one's personal reaction to the totality of the evidence presented.[17] Hence in his long and careful discussion of the Piper-Hodgson control case he constantly admitted that the same evidence would vary in scientific worth and persuasive power directly in accordance with the attitude assumed by the reader.

The comprehensive hypothesis of Frederic Myers of a subliminal, or unconscious, larger self, in dynamic relation with

[14] Cf. "Note to 'Second Report on Experimental Psychology' ", Proc. of the Amer. Soc. for Psychical Research, Vol. 1, pp. 317–319, and his review of Parish's "Zum Kritik des Telepathischen Beweismaterials" and "Hallucinations and Illusions", Psychol. Rev., Vol. 4, pp. 657–658.

[15] Cf. his review of Hansen and Lehmann's "Ueber Unwillkürliches Flüstern", Psychol. Rev., Vol. 3, pp. 98–99. "Sidgwick's 'Involuntary Whispering' ", Psychol. Rev., Vol. 4, pp. 654–655. "Lehmann and Hansen 'On the Telepathic Problem' ", Science, N. S., Vol. 8, p. 956. "Messrs. Lehmann and Hansen on Telepathy", Science, N. S., Vol. 9, pp. 654–655, and "Telepathy Once More", Science, N. S., Vol. 9, pp. 752–753.

[16] Cf. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888, and "Psychical Research", Psychol. Rev., Vol. 3, pp. 649–652.

[17] Cf. his review of Gurney, Myers, and Podmore's "Phantasms of the Living", Science, Vol. 9, pp. 18–20. "Review of the 'Report on the Census of Hallucinations' ", Psychol. Rev., Vol. 2, pp. 69–75. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888; his review of Podmore's "Apparitions and Thought Transference, an Examination of the Evidence for Telepathy", Psychol. Rev., Vol. 2, pp. 67–69, "Psychical Research", Psychol. Rev., Vol. 3, pp. 649–652. "An Auto-biographical Account of James's Experiences with the Medium, Mrs. Piper", Part III, Proc. of the (Eng.) Soc. for Psychical Research, Vol. 6, pp. 651–659.

selves of another realm, seemed to James an attractive hypothesis for future verification, since it had been attained only after an elaborate study of all the manifestations of abnormal and supernormal consciousness.[18] Nevertheless its purely tentative and somewhat metaphysical character never escaped James's sharp eyes, and he recommended it simply as one constructive effort along truly scientific lines to correlate a huge mass of unwieldy phenomena evidently related but ordinarily viewed in absolute isolation.[19]

James himself argued that all naturalistic explanations of psychic phenomena must be exhausted before supernatural factors of explanation should be introduced[20]; but at the same time he rejected outright the dogmatic assertions of certain hostile critics that, *only* known naturalistic factors should be employed, and if these failed to explain adequately any given phenomenon, the phenomenon itself should be doubted and repudiated rather than the assumed principles of explanation.[21]

On many occasions he was content mainly to observe and to record accurately what took place,[22] or to verify scrupulously the reports of others,[23] not offering any final explanations of what had transpired. On other occasions, he frankly declared that he felt baffled and perplexed by the phenomena observed; and, while

[18] Cf. his review of Myers's "Science and a Future Life", Psychol. Rev., Vol. 1, pp. 70–73. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888. "What Psychical Research has Accomplished" in "The Will to Believe and Other Essays in Popular Philosophy"; "Frederic Myers's 'Services to Psychology'", reprinted in "Memories and Studies"; and his review of Myers's "Human Personality and Its Survival of Bodily Death", Proc. of the (Eng.) Soc. for Psychical Research, Vol. 18, pp. 22–33.

[19] Cf. previous references, especially the review of "Human Personality and Its Survival of Bodily Death". In a letter to Flournoy, James referred with dissatisfaction to his review of this work, and ended with the declaration, "I confess that reading the volumes has given me a higher opinion than ever of Myers's constructive gifts, but on the whole a lower opinion of the objective solidity of the system. So many of the facts which form its pillars are still dubious." (Cf. "Letters", Vol. II, pp. 185–186.)

[20] See, for example, his review of Ermacora's "Telepathic Dreams Experimentally Induced", Psychol. Rev., Vol. 3, pp. 99–100, and "Physical Phenomena at a Private Circle", Jour. of the Amer. Soc. for Psychical Research, Vol. 3, pp. 109–113. In these two instances, at least, James, himself, found it impossible to abandon his orthodox scientific prejudices in spite of the apparently unimpeachable character of the evidence to the contrary.

[21] Cf. his review of Morselli's "I Fenomeni Telepatice e le Allucinazione Veridiche", Psychol. Rev., Vol. 4, pp. 655–657.

[22] Cf. "Notes on Automatic Writing", Proc. of the Amer. Soc. for Psychical Research, Vol. 1, pp. 548–564.

[23] Cf. "A Case of Psychic Automatism, including 'Speaking with Tongues'", Proc. of the (Eng.) Soc. for Psychical Research, Vol. 12, pp. 277–279; and the account of his personal investigations of reputed mediums in "Letters", Vol. 1, pp. 227–228. Only one year before his death in the summer of 1910, James was still eager to investigate personally all cases of mediumship which seemed authentic. To Flournoy he wrote, for example, "Two other cases have been reported to me lately, which are worth looking up, and I shall hope to do so." ("Letters", Vol. II, p. 327.)

he preferred a naturalistic explanation above all others, he could not accept those presented when they so palpably failed to account for the specific phenomena in question.[24]

The mere fact, however, that he appeared persuaded that some new and hitherto unknown forces were at work in these instances, constitutes no adequate ground for the assertion that James was either wilfully deceived or subtly misled by his feelings. Were proof needed for this assertion, it would only be necessary to cite one aspect of his attitude toward the results of his work in psychical research. This was a certain irritation, and at times a downright impatience, with the reported conduct and conversations of the spirits beyond the veil. As early as his review in 1869 of Mr. Epes Sargent's work, "Planchette", he declared,

> ". . . *From the point of view of ordinary human interest,* and as opposed to the jubilation which the spiritualist circles themselves keep up, we must confess to a certain sympathy with the dictum of the *Saturday Review:* 'If this is the spirit-world—it is much better to be a respectable pig and accept annihilation, than to be cursed with such an immortality.' The existence of the phenomena as a class once being granted we fail to discover among all the facts given in Planchette a single one possessing either aesthetic beauty, intellectual originality, or material usefulness."

And as late as 1908 he complained, in his report on the Piper-Hodgson phenomena, of the presence of too much humbug, triviality, and sloppy sentimentality in the deliverances of the medium. If there was a life beyond the grave, surely the sample of it presented for inspection on this side made it appear anything but a desirable existence for serious souls. However, he honestly tried to overcome his strong repugnance to this aspect of the matter, and courageously sought to explain and justify the fact by ascribing the majority of such results to the imperfection of the medium's organism as a transmitting mechanism rather than to the imperfections of the spirits and the life beyond the grave.[25] At all events, James was willing to search for the diamonds in the rough, to endure all risks of deception and ridicule in behalf of the possibility of securing one genuine revelation. To presuppose, therefore, that he was ever blind to the more objectionable features of so much psychical research and spiritualistic literature would be an inexcusable error. James, himself, desired only to set a worthy example which, he hoped,

[24] Cf. "A Case of Clairvoyance", Proc. of the Amer. Soc. for Psychical Research, Vol. 1, Part 2, pp. 221–236.

[25] Cf. "Report on Mrs. Piper's Hodgson-Control", Proc. of the Amer. Soc. for Psychical Research, Vol. 3, pp. 470–589.

would some day lead others to find the truth which had escaped his vigilant search during a life-time of service to the cause. Certainly one must respect the candor with which he confessed his ultimate failure to attain very definite results beyond the establishment of certain facts[26] which demanded further scientific investigation and explanation. And the frankly hypothetical character of the assertion of his own unproved beliefs,[27] coupled with the integrity of the attitude and the method which he always employed in this field of research, should command only high respect from the scientists whose own special mission in life is the ascertainment of truth wherever it may be found.

[26] Chief among these facts he counted the existence of mental telepathy, veridical hallucinations, and the possession of super-normal knowledge by certain mediums, in particular Mrs. Piper. Cf. "Telepathy", in Johnson's "Universal Cyclopedia", Vol. 8, pp. 45–47; review of Gurney, Myers, and Podmore's "Phantasms of the Living", Science, Vol. 9, pp. 18–20; review of the "Report on the Census of Hallucinations", Psychol. Rev., Vol. 2, pp. 69–75; "Report of the Committee on Mediumistic Phenomena", Proc. of the Amer. Soc. for Psychical Research, Vol. 1, pp. 102–106; "An Autobiographical Account of James's Experiences with the Medium, Mrs. Piper", Part III, Proc. of the (Eng.) Soc. for Psychical Research, Vol. 6, pp. 651–659; review of Hodgson's, "A Further Record of Observations of Certain Phenomena of Trance", Psychol. Rev., Vol. 5, pp. 420–424; "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888; "What Psychical Research Has Accomplished", Forum, Vol. 13, pp. 727–742; and "Final Impressions of a Psychical Researcher", reprinted in "Memories and Studies".

[27] Cf. "Address of the President before the Society for Psychical Research", Science, N. S., Vol. 3, pp. 881–888; "What Psychical Research Has Accomplished" in "The Will to Believe and Other Essays in Popular Philosophy"; "Letter on the Trance State", Proc. of the (Eng.) Soc. for Psychical Research, Vol. 18, p. 106; "Report on Mrs. Piper's Hodgson-Control", Proc. of the Amer. Soc. for Psychical Research, Vol. 3, pp. 470–589; "Final Impressions of a Psychical Researcher", reprinted in "Memories and Studies". In a letter written in 1907, James stated, according to his son, "his final opinion of the spirit-theory." "My state of mind is this", he wrote: "Mrs. Piper has supernormal knowledge in her trances; but whether it comes from 'tapping the minds' of living people, or from some common cosmic reservoir of memories, or from surviving 'spirits' of the departed, is a question impossible for *me* to answer just now to my own satisfaction. The spirit-theory is undoubtedly not only the most natural, but the simplest, and I have great respect for Hodgson's and Hyslop's arguments when they adopt it. At the same time the electric current called *belief* has not yet closed in my mind. Whatever the explanation be, trance mediumship is an excessively complex phenomena, in which many concurrent factors are engaged. That is why interpretation is so hard." ("Letters", Vol. II, p. 287.) This is precisely the conclusion James reached two years later when he completed his report on Mrs. Piper's Hodgson-Control. Yet as late as 1909 he declared in a letter in which he referred to the completion of this report, "I rejoice in the triumph of Eusapia all along the line—also in Ochorowicz's Young Polish medium, whom you have seen. It looks at last as if something definitive and positive were in sight." (Cf. "Letters", Vol. II, p. 324.)

REVIEWS

A Thesaurus of the Mental Sciences

Reviewed by A. A. Roback

DICTIONARY OF PSYCHOLOGY. Edited by Howard C. Warren. Houghton Mifflin Co., 1934. 10+372.

Those who will casually pick up the modest volume of less than 400 pages in order to consult it will scarcely realize what prodigious labor was expended on its compilation. Although the *Dictionary of Philosophy, Psychology and Scientific Method,* edited by the late J. Mark Baldwin and published in 1901, exactly a generation ago, contained over 2,000 psychological terms which constitute the core of the present dictionary, there is a vast difference between the earlier treatment of psychological terms and the present.

An attempt to bring out a bulletin of psychological terminology had been made as early as 1916. The late Professor Warren had already been immersed in the project even before that period and soon it had become his life ambition to realize the project on a large scale. His editorial activities and judicious temper had rendered him particularly apt for such a task, and his carefulness, as well as his precision, was noticeable in the revision of most of the cards sent to the one hundred or more collaborators, whose business it was to draw up a list of terms in their respective fields and frame the definitions or revise the definitions already submitted.

Not all the collaborators were burdened with lexicographic work. Some merely approved by a check mark the definitions already formulated. Many dealt with only a few terms. There were a number, however, who handled a whole department, such as psychoanalysis, vision, animal psychology; and thus it would have been appropriate to affix to the names of collaborators listed the rubrics for which each was responsible.

The Dictionary of Psychology is a tribute not only to its late editor who cheerfully carried on his painstaking work in spite of hopelessly failing eyesight but a credit to the experts who gave so much of their time and labor, regardless of the merely nominal compensation. The dictionary might have appeared in much larger format and in double the number of pages, but undoubtedly the publishers considered it best to condense the material in finer type and reduce the cost of the volume ($4.50).

The Dictionary of Psychology is more than a dictionary. It is in a sense an encyclopedia; for the editor was so generous in his conception that he included tables of color-vision tests, fundamental types of com-

plexes, dextrality, errors occurring in experimental investigation, glands treated in psychological literature, logical fallacies, musical intervals, common types of phobias, prefixes and suffixes, reflexes, sensory illusions, spectral lines and range of colors, statistical formulae, symbols and technical abbreviations, topographical reference terms, topographical terms relating to the human body, topography of human central nervous system—and to round out the appendix of 70 pages, he added a glossary of French terms and another of German terms. Some of the tables are of course slight, taking up only a few lines; and more tables can be thought of, as in connection with lapses of pen and tongue, handwriting, but for a first dictionary the amount of information thrown into the bargain is truly both remarkable and magnanimous.

There are probably over 9,000 terms defined, many of them with explanations and illustrations, so that the psychological dictionary will serve even a lay reader to better advantage than the general dictionary. The pronunciation is indicated in many instances where there is a tendency to mispronounce. The German and French equivalents occur with nearly all the highly technical terms; and synonyms as well as antonymal references are included.

It would be presumptuous for one individual to attempt to find flaws in a collective work in which so many authorities collaborated, and perhaps it would be ungracious for one who was in part responsible for three departments to point out omissions or inaccuracies, but only by such concerted efforts on the part of reviewers can the *Dictionary of Psychology* be brought to a level of superiority which would have pleased the lamented editor, had he lived to read the comments.

It is fortunate that Professor Warren lived to see his *Dictionary* in proof and even to write the introductory statement which outlines his editorial policy. There is little to take exception to in this general programme so characteristic of the editor's sane and critical attitude. If any fault is to be found in that connection, it is perhaps that not all the rules laid down in the introduction have been consistently carried out. Professor Warren has always combated pedantry in his capacity as an editor, but sometimes it is well to consider the motives of a particular usage which might seem pedantic to a journalist. I am referring to the dropping of the diæresis or hyphen in words like preëminent, coördinate, coöperate, etc. Not only do foreigners often lose the drift of the sentence when such diacritical marks are missing, but even the educated American will feel a tendency to run together the letters phonetically, as if the double vowels constituted one sound. One might also question the concession to those modernists who wish to Anglicize such words as "questionnaire", into "questionary", which brings up an adjectival association.

The problem of inclusion and exclusion is always a pesky one in reference works of a specialized nature. *The Dictionary of Psychology* is rather inclusive, containing a considerable number of philosophical, biological, mathematical, musical and even pharmacopœic terms. The

collaborators will remember that the earlier title of the volume suggested was *Dictionary of Psychology and Cognate Sciences*, which would have been satisfactory in one aspect but not in another, since mathematics is not a cognate science and music is neither allied nor scarcely a scientific discipline. Sometimes one wonders why certain terms had been included like "insulin" or "belladonna" or why "arpeggio" should be favored while "glissando" should have been slurred.

We note also that occasionally one sense of a word would be given but not another even in the same universe of discourse or on the same plane of usage. Thus, the popular use of "blues" as a spell of depression is rightly included, but by the same token, the many jazz tunes, under that name, which really lend distinction to that generally insipid development of music should also have found a place *sub verbo*. Similarly the ordinary sense of "privation," which is a mental fact, should have been alluded to side by side with the psychoanalytic usage.

The coördination of the different senses in which a term is used must naturally have been a difficult job, as each expert would deal only with the particular sense of the word that he is acquainted with. Hence it requires an encyclopedist to allocate the various uses, *e.g.*, *assimilation* is of some importance in philology, and important because of the psychological principle involved, yet that aspect does not appear in the *Dictionary*. "Assimilation" is also the tendency of a graphic movement to resemble another either previously seen or performed. The lacuna sometimes is apparent in a conception. Thus the word "formalism" applies not only to æsthetics but also to ethics (*cf.*, Kant's Categorical Imperative).

Professor Warren in his introductory statement speaks of the necessity to restrict the terms to those in general use. Apparently those employed by a single writer or suggested anew were rejected; for "granted that such terms are badly needed in psychology; who would ever discover them, hidden in the bypaths of an alphabetic maze"?

There is surely a certain amount of justice in the decision, but there is also involved here the danger of catering to the idols of the marketplace. The question is not: how many people have adopted a certain term?, but, what is the intrinsic lexicographic value of the coined term? In other words, the *Dictionary* is to be regarded not merely as a reference book for readers but as a source book for writers as well.

On many occasions a writer is in a quandary about using or coining a term, which, on consultation, he could adopt with an easy conscience. On the other hand, there are too many synonyms for some concepts, due to the fact that one author is not acquainted with another's work. The term "kraseology" is certainly to be preferred to such a circuitous phrase as "theories of temperament" or "discussion of the doctrine of temperament". "Perilepsis" * has been cited in several books and yet is not found in our *Dictionary*. "Kinidiom" as a designation for an expressive movement

* The intuitive grasp of a personality, without stressing the affective or cognitive or conative approach at the expense of the other two.

peculiar to an individual is also beginning to obtain currency. Other terms which I find missing are "synkinesis", *i.e.*, the spread of a motor impulse to other muscles in the organism (*Interference of Will Impulses*, p. 95). "Personalysis" (analysis of personality, particularly in the form of a chart); "altrocentricity", *i.e.*, the opposite of egocentricity (altrocentricity is not necessarily altruism, but bears the same relation to it as egocentricity does to egoism); "analysand", *i.e.*, the person analysed; "iatrogenic", *i.e.*, caused by medical treatment or rather diagnosis (as in the case of a neurosis); "pseudosophy" and "sciosophy" the collective name for pseudoscience; "thaumatomania" the propensity for relating (naturally imagined) wonders, and "sciolist", a superficial yet pretentious dabbler in the sciences; "intelligentsia", "perverse", "shrewdness", "poise"—but why draw up a list of addenda at this stage?

More important is the examination of the definitions. In the large majority of instances, the definitions are clear. The department of psychoanalysis is handicapped from the very nature of the subject, but there is no reason why definitions of the *ignotum per ignotius* kind should take precedence over the unambiguous ones; *e.g.*, "the synthesizing subject manifested in the synthesis" is a philosophical theory, while "the expression of a person in the process of self-training, self-expression and self-development" is a nondescript redundancy. Even the principal definition of character as a phase of personality comprising "the more enduring traits which are of ethical and social significance" is open to question.

The conventional definitions of intelligence, too, smack of the popular approach. The core of intelligence is not so much adaptability as the ability to discriminate between the good and the bad, the true and the false. One other important term which has been treated rather cavalierly is "intellect". We are reminded of the days of Abercrombie when we read that intellect is "the group of cognitive processes more especially their higher forms, *e.g.*, the discovery of relations", or (2) "the capacity to perform these mental processes". My own definition in this case would be "the operation of the mental process collectively which enables an individual to assimilate knowledge systematically and thereby to react upon events in the world critically". Nothing short of this seems to me adequate. A lightning calculator must of necessity discover many relations, but is generally devoid of intellect, although he may be very intelligent. We are surprised, furthermore, to learn that "insight" as used in personality charting is conspicuously absent. None of the three senses given applies to insight either as "self-knowledge" or "the sizing up of oneself in relation to others", which is the most important meaning of the word.

The demarcation line between some terms in a few cases is not clear-cut. The difference between applied psychology and psychotechnics is not that the former deals with educational, historical and literary fields, while the latter deals with the industrial and commercial, but rather that

applied psychology, in the broad sense of the word, need not go farther than *explaining or drawing conclusions in any sphere* via psychological channels, while psychotechnics actually shows *how to produce practical results.* Nor is there any distinction between applied psychology and the "application of psychology", as we are told under "applied psychology". The differentiation between psychotechnology and technopsychology likewise is one of hair-splitting dimension, which must have escaped the searching eye of the late editor. If there is to be a cleavage between the two, then technopsychology can only refer to the technical approach or treatment of psychology, but that does not occur to those responsible for the short article.

While we are on the subject of distinctions, there is apparently no attempt made to show in what way "instinctive" differs from the psychoanalytic adjective "instinctual"; and if "agnosticism" is to be distinguished from "positivism", it should *a fortiori* be differentiated from "atheism" with which it is continually confused.

The historical background of psychology has been exceptionally well handled throughout the definitions, even if one may disagree with the statement that the formal school of Behaviorism began with Watson, unless formal is a synonym for "patented" or "blatant". Max Meyer, and others at about the same time, had been doing the scaffolding of the new annex to psychology most painstakingly; and their obscurity in this connection is a reflection on the independent judgment of American psychologists.

With regard to the German equivalents, although it is not always easy to find suitable renderings, perhaps a little more care should have been exercised in explaining the varying nuances. Let me take an instance: our "effeminate" is not so derogatory as the German *unmännlich.* The former only brings out the feminine qualities; the latter stresses the negative. It is somewhat amusing that where German equivalents are given so extensively in the *Dictionary,* the much celebrated term "folkways" should not have been at least traced to the German *"Volksweise".* Furthermore it would have been expedient to print the German terms actually defined in bold italic type. Otherwise, the consulting student may not be impressed by the symbol [Ger.] in brackets at the end of the definition, when he sees the word *Anregung* or *Anschauung.* In one or two cases, the definition begins with "a German term", etc., but this procedure is not uniform. The mental set, as is well known, changes for the foreign term and thus aids perception and assimilation.

The proofreading of the *Dictionary of Psychology* has been extremely well done; and it is gratifying that a list of *errata* does not greet us at the end. If the *Dictionary of Psychology* cannot compare in scope with the dictionaries of other sciences, like chemistry or medicine, it can at least take its place with them in the matter of quality. Five years of toil on the part of the editor, not to mention the many months of labor of his collaborators, have gone into this work, which, in spite of previous

endeavors like English's *A Student's Dictionary of Psychological Terms*, is an event in the psychological world. It would be superfluous to say that the *Dictionary of Psychology* will be as indispensable to the worker in the mental sciences as the general dictionary is to the average reader.

SPEECH DISORDERS: A PSYCHOLOGICAL STUDY OF VARIOUS DEFECTS OF SPEECH. By Sara M. Stinchfield, Ph.D. New York: Harcourt, Brace & Co., 1933. Pp. 341. Price, $4.00.

Most psychologists are familiar with stammering and stuttering as speech disorders. Few of them know that there is a wide variety of motor-laryngeal disorders. Travis has listed seven major groups, with forty-three subdivisions, and Bridges has a classification consisting of thirteen special disorders and many varieties of each. Dr. Stinchfield offers a classification which is a distinct addition to this field. It was prepared in 1931, in collaboration with S. D. Robbins, for the American Society for the Study of Disorders of Speech.

The classification consists of a number of new and old terms subsumed under seven major concepts, viz., *Dysarthria* (defects of articulation due to neurological disturbances), *Dyslalia* (functional and organic disorders of articulation, such as cluttering, lisping, nasal speech, etc.), *Dyslogia* (difficulty in expression due to psychoses, such as logorrhea, verbigeration, etc.), *Dysphasia* (impairment of language due to "weakened imagery", disease, shock, injury, etc.), *Dysphemia* (including agitated speech, dumbness, neurotic lisping, stammering, and stuttering), *Dysphonia* (defects due to functional disorders of vocal cords or defective respiration), and, finally, *Dysrhythmia* (or defects of rhythm other than stuttering). A detailed description of these terms occupies the first part of the book.

In the second part of her study Dr. Stinchfield presents her own research findings. The study she carried out is based on data collected at the public-school clinics of San Francisco, Tampa and London; the city speech-clinics of the cities of Northampton and Springfield, and the private clinics of Mt. Holyoke College and the University of Vienna. The material consisted of 412 cases. Of these 116 served as experimental (corrective) subjects and 296 were used as controls. A speech-data sheet consisting of forty-eight questions was employed, a Thurstone schedule was administered, handedness-indices were obtained following the Jasper-Travis method, reading and intelligence tests were given, the scholastic standing was investigated, and some case material was obtained.

The author has not found any evidence confirming the theories of Travis and Orton, recently disproved from a different angle also (G. M. Peterson—1931, 1932). She has demonstrated rather convincingly that right cerebral leads are not invariably present in left-handed individuals. In spite of the fact that she has found a larger amount of left-handedness in stutterers than in a normal speech-group, she has also shown that

there is a greater amount of ambidexterity among the normals than there is among stutterers.

Confirming, however, the results obtained by Wallin (1915) and others, Dr. Stinchfield offers evidence showing that 52 per cent of her stutterers were in the lowest scholarship-group, 16 per cent in the middle group, and only 32 per cent in the highest two groups. Confirming the results of the White House Conference (1931), she has found that intelligence does not enter into dysphemia as a factor, viz., there were as many who had scored high as there were of those who had scored low on intelligence tests.

Some novel results have been obtained along certain lines. The speech-data sheet has shown that socioeconomic deficiency is evidently of no value in determining speech adjustment, for more children with speech defects had come from superior homes (in Mt. Holyoke College as well as in the public schools) than had come from the homes of laborers. In regard to singing, fondness of debate, previous speech training, and in a few other respects, no striking differences were found between the corrective group and the controls.

On several points the present reviewer must take issue with the author. In the first part of the book she admits that "Early speech habits of the child are 'conditioned by environment' ", and that the "Speech of the child depends very much upon the encouragement received in that environment—upon social urge, social pressure, and competition for adults' attention, as well as upon the physiological stage of the development of the child". In spite of this, she later states that "The configuration or conception which a child has of any sensory experience, depends largely upon the way in which a given sensory experience is compounded *or upon the innate tendencies* of the child." Elsewhere she states even more courageously: "We feel that imagery is a matter of innate endowment." Such statements in a day when psychology is veering away from innateness as an explanatory principle in human behavior is, to say the least, regrettable.

Another point. This work is offered largely as a theoretical contribution, but it contains no contribution on the etiological side. In her discussion of neurological cases the author rightly defers to the etiological statements found in the medical literature. In her more definitely psychological material, however, there are no constructive advances over the present state of our knowledge. Her presentation, too, is notably weak on the treatment side, containing a small amount of case material, but no information as to procedure or success in the treatment of various speech disorders.

What we need is not more theorizing or compilations of questionnaire data. Unable to separate clinical from theoretical advances in this field, we must proceed to build etiological formulae based on empirical observation and controlled therapeutic procedure. We need carefully analyzed clinical records on active analyses, passive analyses, hypnoanalyses, and the training techniques now in vogue. When we have these, we shall be

able to draw the line between what is valuable and what is not. Ultimately the entire problem is waiting on more precise knowledge of personality development. Personality study, as such, however, may in turn be benefited by studies of behavior disorders of all types.

MAURICE H. KROUT.

Chicago City Junior Colleges.

THE ORGANISM OF THE MIND: AN INTRODUCTION TO ANALYTICAL PSYCHOTHERAPY. By Gustav Richard Heyer, M.D. Transplated by Eden and Cedar Paul. New York: Harcourt, Brace & Co., 1934. Pp. 271. $3.50.

The general position of this book is that of double-aspectism. The author announces at the outset that the problem of existence can not be understood in terms of psychophysical or interactionist schemes, but must be analyzed in terms of a series of spheres or cycles "in which life variously and progressively discloses itself as it moves from primitive to increasingly differentiated phases and forms". These cycles are the vegetative-vital cycle of nutrition, the animal-vital cycle of circulation, the mental-vital cycle, and the cycle of autosuggestion and abreaction.

Taking up the cycles in this order, Heyer states that the "mental cycle" constitutes not only a specifically human cycle, but possesses certain characteristics differentiating it from all the other cycles even in man. These characteristics are: (a) incessant mutability, (b) uniqueness from person to person, and (c) a fundamentally unreasonable nature. Because of these characteristics, Heyer holds this mental cycle can neither be understood by purely rationalist techniques nor reduced to formulae applicable to inorganic nature.

Aiming to reconcile intellectualism with intuitionism and "imaginative insight", Dr. Heyer makes his position clearest when he reaches the discussion of the fourth of his cycles. As a practicing psychiatrist he had tried successively all known clinical techniques. He had adopted and rejected persuasion, hypnosis, relaxation, nerve-point massage, Adler's method, orthodox analysis. He gives reasons for his abandonment of these procedures, and finally arrives at the point where he can recommend Jung's treatment and theoretical position as most satisfying for his purposes.

The reader familiar with modern trends in experimental and clinical psychology revolts at this point, if he has not done so earlier in his reading of the book. The presentation is full of abtruse philosophical assumptions often borrowed from the occult teachings of the Hindus or based on oriental mythology. Jung's esoteric doctrines, linking man's behavior in a mysterious and impalpable way with the "evolution of the psyche", fittingly cap the author's meanderings through this realm of ponderous nonsense.

With some charity of interpretation, the book may be taken as a plea for the effect of intraorganic factors on structural changes, and the con-

tinuity of implicit and explicit forms of behavior. If so, it is, of course, in keeping with some other treatises which have argued along these lines in recent years. It is in no way comparable, however, either in soundness of approach or in thoroughness of method with the writings of S. E. Jelliffe, W. A. White, Karin Stephen, and others setting forth this general thesis.

The shortcomings of the book need not blind us to some of its positive features. Being a revised collection of lectures delivered by the author, the book is written in easy, conversational style. It abounds in apt illustrations culled from an active clinical experience. It contains a good deal of clinical wisdom, unobtainable in the more theoretical writings of Jung and his followers. It presents interesting reproductions of drawings prepared by patients and interpreted by the author. In fine, the book makes interesting vacation-reading for those who lack either time or patience for more accurate knowledge along psychotherapeutic lines.

MAURICE H. KROUT.

Chicago City Junior Colleges.

ALCOHOL AND MAN: THE EFFECTS OF ALCOHOL ON MAN IN HEALTH AND DISEASE. Editor, Haven Emerson, M.D., and associate editors. New York: Macmillan, 1932. Pp. xi+451. Price, $3.50.

This volume constitutes a symposium of sixteen important contributions regarding the effects of alcohol on human functions and behaviors. No other one book known to the reviewer presents more substantial and unbiased evidence upon which to base an intelligent opinion about this controversial subject; yet, let it be added at once, that in some respects, the findings cited here are contradictory, and in others, the experimental evidence is incomplete, but these limitations are readily and honestly acknowledged by the editors. The purpose of the book is to provide "education in the basic facts about alcohol", which the editorial group believe to be "essential to the best interests of modern man and his social organization". Only too often have the tides of personal and political debates obscured the truth about the subject, so that the present careful and scientific treatment, basing conclusions upon experimental results, is an exceedingly welcome contribution.

The book is divided into six parts. Part I traces certain experimental effects on human functions; physiological and pharmacological effects are studied as well as the effects of moderate doses in healthy persons. In Part II, the actions of alcohol on the cell and in heredity are discussed; studies of its actions on lower organisms, on germ cells and on fertility are cited. Part III describes the poisonous nature of alcohol and also its therapeutic uses; the latter section embraces five essays: the use of alcohol in the treatment of diabetes mellitus, of pneumonia and of tuberculosis as well as its use in old age and as a stomachic. In Part IV, the influences of alcohol upon the body's resistances to infections are discussed and also the pathology of acute and chronic alcoholism. Of

special interest to the psychologist are the effects of alcohol on man's conduct and mentality set forth in Part V in three chapters: "Psychologic Effects of Alcohol in Man" by Walter R. Miles, "Alcohol as a Psychiatric Problem" by Adolf Meyer, and "The Relation of Alcohol and Crime" by Herman Adler. Part VI deals with the relationships of the use of alcohol to longevity, mortality, and mental disease; the final chapter reviews the recent literature on alcohol as a community health problem. A list of references to the experimental literature is provided at the close of most of the chapters. A glossary, an index of authors, and an index of subjects at the end of the volume enhances its usefulness.

Since the work draws its materials from a great variety of sources and since the conclusions are carefully qualified and sometimes conflicting, it is difficult to render an adequate summary of the book. In the main, however, the authors agree that alcohol is an anesthetic releasing certain inhibitions of the higher central nervous system; in moderate amounts it produces a "pseudo-stimulation" by which the drinker feels introspectively, "The comfort and joy of psychological escape", a sort of spirituous euphoria. While such indulgence may be an "aid in attaining relaxation", toxic changes occur in the tissues at the cost of "decreased sensitivity to nervous stimuli" and "motor incoördination". In general, the therapeutic uses of alcohol are being replaced by more direct and specific therapies.

In spite of its many contributors the work is fairly even in its high quality; some repetitions and some slightly inconsistent views do appear, however. The editors address the work to "school teachers, ministers of the churches, editors and publicists". Educated people everywhere will be pleased with this compilation in one volume of so much valuable and authoritative material.

Dartmouth College. IRVING EDISON BENDER.

THE QUEST FOR CORVO: AN EXPERIMENT IN BIOGRAPHY. By A. J. A. Symons. New York: Macmillan, 1934. Pp. 293. Price, $2.50.

The fear-inspiring marriage of literary and psychological methods is consummated beautifully in *The Quest for Corvo.* Symons, while sensitive to form and fascinated with his subject, presents, nevertheless, a body of facts fully and objectively. The synthetic and sympathetic feelings of the artist are here united properly with the analytical and painstaking research of the scientist.

The biography recounts the tragedy of an obscure English author by the name of Frederick William Rolfe, or Baron Corvo, as he chose, significantly, to call himself. Converted early to the Roman Catholic faith, Rolfe's guiding ambition was to become a priest; he spent several years in clerical study but was never ordained, a disappointment which embittered his whole career. Trying his hand at tutoring, painting and writing, he likewise met with disappointment. Certain of his literary endeavors, chief among them being *Hadrian the Seventh,* were published, but the

financial rewards of which he stood in so urgent need failed to eventuate. Feeling himself constantly beaten, he projected his failures upon his publishers and his friends. Deeply plunged in debt, Rolfe expected his friends to deliver him; when they finally refused to do so any longer, Rolfe wrote them regularly caustic and vindictive letters. By dramatizing himself in Hadrian as the pope, "The overwrought paranoiac was able . . . to satisfy his spleen against all those who had in fact or in fancy injured him, to 'cleanse his bosom of much perilous stuff'."

Symons did not know Rolfe in the flesh, but from the biographer's delicate understanding of this "defeated man of genius" in his works and letters, one gains a unified impression of Rolfe's "contradictory" but "vital and unique personality". A lonely, mistrusting man was Rolfe; he "took refuge from his disappointments and regrets in his own spirit" and was able to create a certain beauty from "the wheel of his torment" in his writings. His very nature facilitated "painful friendships and strange unhappy adventures". Elaborating this point philosophically Symons claims: "In all human lives there is a recurring pattern, sometimes difficult to perceive, sometimes on the surface; and the pattern is drawn from within"., This affirmation of integration when the individual is studied as a whole concurs with some findings of the reviewer's own researches. In the case of Rolfe's continued persecutions and failures, evidence is presented that behind them lay the homosexual component.

Of outstanding interest psychologically is Syman's method of delineating his subject. He carries the reader with him in his search for materials: letters, impressions of contemporaries, and Rolfe's works published and unpublished. With such a framework Symons traces the course of his research, preserving, despite its aesthetic limitations, an exceptional coherence. The book is important to students of personality in showing the possibilities of the telic and stylistic approaches (*cf.*, F. H. Allport); in the present work these possibilities emerge with literary excellence and psychological penetration.

Dartmouth College. IRVING EDISON BENDER.

How THE MIND WORKS. By Cyril Burt, Ernest Jones, Emanuel Miller and William Moodie. Edited by Cyril Burt. New York: D. Appleton-Century Co., 1934. Pp. 336. $2.50.

"The chapters which make up this volume were originally delivered as a set of broadcast talks upon psychology. . . . A few of the talks have been rewritten or expanded; all of them have been carefully revised by the authors; but no effort has been made to eliminate the conversational note, or to convert a popular discussion into a technical summary or review. Our prime intention has been to show, by simple instances and in plain terms, how interest in the human mind has grown into a serious scientific study, and how the conclusions reached have a close and practical bearing on the problems of everyday life."

These words from the preface tell the reader what he may expect of the book, and the reader has no reason to be disappointed. The careful workmanship is as evident as the conversational note; no one could ask for simpler instances and plainer terms; practical applications crop out on almost every page; and the serious scientific study at the basis of the discussion is presented by highly competent experts.

The three main sections of the book are "How the Mind Works in the Adult", "How the Mind Works in the Child", and "How the Mind Works in Society". In the first section, Professor Burt discusses the conscious mind and Dr. Ernest Jones the unconscious mind; in the second section Dr. Emanuel Miller considers problems in the development of the child and Dr. William Moodie problems in the treatment of the child; and in the third section Professor Burt returns to the task of exposition with chapters on the psychology of the sexes, of nations, of politics, of leisure, of art, and of religion. Dr. Jones, Dr. Miller and Dr. Moodie present the psychology of psychoanalysts; Professor Burt presents the psychology which, for want of a better name, may be called the psychology of professional psychologists.

In a book of this sort, intended to give the general public a survey of the field of psychology, it would be impossible, in the present stage of development in the science, to satisfy all judges that the wisest possible selection of material had been made. A different set of writers would doubtless have selected different materials, and they would doubtless have presented their materials from different points of view. But the selection actually made by the writers of this book has the undeniable merit of introducing the reader to a wide range of pertinent problems and of acquainting him with many of the accepted procedures and prevalent attitudes in contemporary psychology. No one can call the book one-sided, and though the writers cover a great deal of ground, the treatment is never careless and slipshod. On the contrary, a characteristic which distinguishes the book throughout, is a happy combination of expertness and simplicity in the handling of the material. Specific instances reveal this quality better than any amount of description. Dr. Jones, for example, gives a brief and enlightening account of the method of psychoanalysis by commenting on a paradox. "Analysts commonly teach", he says, "and Freud himself would say so, that the basis of psychoanalysis is what is generally called the free association method. Yet it would be more accurate to say that the basis of psychoanalysis was Freud's discovery—perhaps his greatest—that there is no such thing as a free association of ideas." Dr. Miller and Dr. Moodie apply the concepts of psychoanalysis to the child without terrifying the reader either by forcing a technical terminology upon him or by arousing unfavorable emotional attitudes. Without using the term super-ego, Dr. Miller gives the following, unalarming account of its development. "These persons who influence the child's conduct become a part and parcel of the child's emotional, mental equipment. By loving the father and mother, the child takes them over into

himself as persons who are lovable. By admiring them, it acquires an ideal of excellence which it tries not only to find in other persons but to develop in himself. By fearing and obeying, the child takes over a system of conduct which will be worth treasuring, worth holding to its bosom because it comes from a source which is loved and admired." In fact Dr. Miller and Dr. Moodie sometimes succeed so well in describing Freudian situations in the terms of everyday life that they make the Freudian discoveries seem almost trite. Professor Burt in every part of his discussion gives a masterly performance. His crisp, competent sentences cover the ground so adequately and with such unerring skill that one cannot fail to recognize him as a master not only of psychology but of its applications as well.

The trouble is that the skill which runs through the whole presentation is sometimes a shade too insistent. The conscientious brightening up of the exposition with anecdote and illustration, the sustained cheerfulness that irresistibly suggests the interested manner of imparting knowledge in the nursery, the reassuring note that creeps into the accounts of the emotional entanglements of childhood—all these give the book a tone that keeps it from being what it so nearly becomes, a first-rate achievement in the humanizing of knowledge. Such an achievement occurs when a learned man not only presents his material as simply and sanely as these men have done, but also speaks to his reader as one human being to another—not as an instructor, or an adviser, or an expert. This level of achievement the book just misses, and one suspects that it misses because the writers were audience-conscious when they approached their task—radio-audience-conscious.

Wellesley College. EDNA HEIDBREDER.

MAJOR ASPECTS OF PERSONALITY. By Maurice H. Krout. Chicago: The College Press, 1933. Pp. xviii+364. $2.50.

The author of this book is strongly convinced that the human personality cannot be adequately accounted for from the standpoint of any one science; that a satisfactory theory of personality can be achieved only by drawing on the combined resources of biology, anthropology, sociology, and psychology, and by integrating their contributions. This ambitious task Mr. Krout attempts in developing the theory about which his book is centered, the theory that "the ecological, biological, cultural, prenatal, early postnatal, later postnatal, and the situational (laboratory and clinical) approaches to the study of the individual give us the 'major aspects of personality' ".

It is evident, as the author presents his theory, that he has developed very strong attitudes for and against current concepts that pertain to it. He is definitely against a good many things. He is against regarding race as a unit character, races as biologically determined entities, and individuals as creators of culture; he is against the instinct theory and the terminology of mentalism; he is against the measurement of races

and nearly all tests of personality; he is against the psychoanalytic concepts of the libido, the censor, dynamisms, a social unconscious, and a personal unconscious as a receptacle for all repressed material; and he is always and forever and from every point of view against the heredity-environment dichotomy. His attitudes against are matched by equally strong attitudes for. He is distinctly in favor of treating race as a culture symbol, racial groups as the product of ecological processes, racial and individual types as products of ecological and cultural processes, and individual differences as the result of ontogenetic stages of development; he is also in favor of the conditioned reflex and of habit formation as conceived by experimental physiology and behavioristic psychology; and he has been won over completely to several of the concepts of the psychoanalytic school, among them the conscious and the unconscious provided they are objectively conceived, the symbolism of gesture, the mechanisms of personality adjustment, the thoroughgoing determinism which regards no conduct as accidental, "appetitive conditioning" as an important determinant of personality development and personality type, and genital appetite and parental fixations as powerful factors in the development of the individual.

The chief merit of the book is the author's application of some of the concepts of contemporary sociology to the problems of psychology. Unquestionably it is wholesome for psychologists to be reminded occasionally—perhaps even as repeatedly as some of the devotees of the social sciences seem to think necessary—of the importance of the problems centering about the concept of culture and of their bearing on the problems of psychology. In biology and psychology, however, Mr. Krout seems less able and less at home than in the social sciences. Though he has not failed to inform himself on the points he discusses in those fields, he seems to have studied them as isolated topics. In other words, in acquainting himself with psychology and biology, he seems to have seized upon some of their culture traits and to have missed their culture patterns. And as Mr. Krout himself says, "The full significance of a given group's culture is not revealed by an analysis into culture traits. The traits themselves must be understood in terms of the relationships into which they enter, *viz.*, in terms of those conceptual schemes or patterns which the group has evolved for purposes of guidance in the conflicts with which it was confronted." As a result, the author seems at times not to have caught the full significance of the point he is commending or ridiculing. For a man who does not hesitate to criticize, he is curiously uncritical at times—in his treatment of the conditioned reflex hypothesis, for example. And sometimes his criticisms go strangely astray, as in his failure to recognize in Thorndike's treatment of original nature, an early stage in the development of the attack upon the traditional concept of instinct. Sometimes, however, Mr. Krout's criticisms are telling and his comments stimulating, and it is doubtless only because he has neglected

the relevant culture patterns that he seems at times to be operating with what an ancient sage has called "a contracted understanding".

Wellesley College. EDNA HEIDBREDER.

THE SCIENCE OF WORK. By M. S. Viteles. New York: Norton, 1934. Pp. xi+442. $4.00.

This volume is a well-integrated account of the psychological problems and achievements of industry: it describes concrete situations in specific industries; it furnishes data concerning attempted solutions of the problems of personnel selection, placement, and adjustment, motion-study, fatigue, and accidents; and it makes clear the philosophies and trends of industry. The envisagement of these problems is enlightened, and shows throughout a concern for the personality of the worker.

In dealing with this banal material of industry, the author has happily organized the data about points of human interest; and he has unified material from a wide diversity of sources through a consistent philosophy. The author's style sustains interest, frequently with interspersions of a cultural character unusual in this field of literature. There is a happy touch in several of the titles, "Work Through the Ages", "Worse than War". Graphs and illustrations are numerous—but the Mickey Mouse character of some of them makes one wonder for what group of readers they were designed. Are they for "psychological effect"?

While in general the author is sanguine about the present achievements of applied psychology, he does stress the need for further accumulation and inter-relation of facts.

CHARLES LEONARD STONE.

INTRODUCTION TO COMPARATIVE PSYCHOLOGY. By C. J. Warden, T. N. Jenkins and L. H. Warner. New York: Ronald Press, 1934. Pp. x+581. $4.50.

The latter and major portion of this considerable compilation is divided into chapters, each rich in description of the various receptive and the various reactive capacities of the members of a given phylum or of a group of related phyla—the protista, the echinodermata, the arthropoda, *et cetera*. This portion of the book might serve as a text for a substantial systematic course in comparative psychology; but it also should prove most useful as a reference work for psychologists and zoölogists.

Two of the earlier chapters treat of the apparatus and methods for testing receptive and reactive capacities. Two deal with classification. And the first three chapters endeavor to establish a point of view from which adequately and intelligently to study animal behavior.

Chapter I presents a brief history of comparative psychology. Chapter II, concerning the natural science point of view in biology, criticizes and discards both vitalism and mechanism, advocating the principle of organi-

cism: "Strangely enough, the biologist often 'apes the physicist' in order to appear scientific, and thus ignores the basic implications of organicism. . . . The principle of organicism has seldom been sufficiently stressed in comparative psychology. . . . The reflexology of Pavlov and Bechterev . . . fails to recognize the dynamic and integrated character of stimulus-response processes." But one who looks now for an application of Gestalt psychology is challenged by the concluding sentences in this chapter: "The Gestalt psychology has offered valuable criticisms of elementalism only to resort to the mentalistic concept of 'insight' as a principle of explanation. In the following chapter we shall attempt to show that the basic facts of biology favor a broad organismic view of behavior, developed along strictly objective lines."

In the third chapter the authors advance Warden's action-tendency theory. The primary action-tendencies (those which relate to basic biological needs—hunger, thirst, sex, maternal impulse) "are regulative with respect to the organism as a whole. They are the cores of complex behavior patterns, and serve as the inner springs of all activities. . . . Action-tendencies rather than reflexes are the basic units of behavioral functioning. They are the first to appear in ontogenesis, as might be expected on account of their importance to survival. . . . Simple movements of the reflex type become differentiated and discrete within the larger patterns only after a time."

These "primary action-tendencies" seem rather vague, and not too clearly demarcated from the hormic activities of McDougall (which the authors criticize as mentalistic) or the dynamic neural organization of Köhler (which the authors regard as another form of vitalism). But perhaps incipient science must tolerate a measure of vagueness, especially if the vagueness be limited to theory, and if the subsequent descriptions of actual behavior have intelligible definition.

Whatever the interest of the reader, be it theoretical or experimental, this volume is abounding for him.

CHARLES LEONARD STONE.

TO BE OR NOT TO BE: A STUDY OF SUICIDE. By L. I. Dublin and B. Bunzel. New York: Harrison Smith and Robert Haas, 1933. Pp. x+443. $3.50.

The most significant thing about the present volume, it seems to the reviewer, is the emphasis placed upon two factors which seem rather incongruous. In the first place, the authors are officials of a large life insurance company, and they are quite frank to admit that their interest in reducing the suicide rate rests upon a desire to reduce the cost to the insurance companies. (They say, however, that the claims paid in such cases will "In the final analysis, . . . mean a corresponding addition to the cost of insurance to other policyholders".) But at the same time, when they consider ways and means of reducing the number of self-inflicted deaths, the authors point out the significance of our unjust

economic order, and predict that as long as wealth is so unequally divided and unemployment and consequent want is widespread, the suicide rate will continue to increase. We must, therefore, modify our social order, so as to take care of this injustice. (They do not suggest a method.)

The book is divided into seven parts of several chapters each. The first three sections are devoted to a consideration of the objective circumstances which surround self-inflicted deaths; the effects of age, sex, nationality, marital status, etc., are discussed in detail, and the appendix gives 38 tables showing the influence of these factors upon the suicide rates. These tables include a wealth of material of the most varied kind, and it appears to be a most valuable contribution to the data on the subject.

Section IV is anthropological and historical in nature, and analyzes the attitudes toward suicide among different primitive and ancient peoples; the effect of various religions upon suicide rates is particularly stressed. Part V deals with the legal aspects of suicide and the attitude of the law court toward the self-murderer and his family. This problem is also approached historically, although the present status of the suicide in the U. S. is most emphasized.

From the psychologists' point of view, the last two sections (25% of the text) are by far the most important. Taking a stand strongly colored by psychoanalytic theory, the authors analyze the psychological mechanisms and motives behind suicide. The mechanisms of the unconscious, *e.g.*, the Œdipus complex, hatred and love components, feelings of inferiority, and tendencies toward homosexuality, are considered and especially the manner in which their functioning (or malfunctioning) produces suicide. Morbid fears (unconscious), feelings of inferiority, hatred and hostility (particularly in the Œdipus situation), and guilt are the most important bases for taking one's own life. The authors repeatedly emphasize that there is never one single cause for the act—it is the end product of a concatenation of forces, all of which work together to produce it. Mental disease is stressed as a very important cause of suicide, and statistics are quoted to show the relative frequency with which mental patients commit suicide.

In the last section the authors consider the problem of prevention. Some of their remedies are highly specific, *e.g.*, Save a Life Leagues, religious belief, etc., but they consider that eventually the only adequate prophylaxis is mental hygiene. Since suicide is the result of the operation of many circumstances, and no two cases are the same, no universal remedy can be suggested. The importance of religious belief as a preventative for self-destruction in individual cases is emphasized, but the problem can be permanently solved only by developing strong and well-adjusted personalities through good mental hygiene. The importance of parental education, good school training, intelligent use of leisure time, and particularly of a normal heterosexual adjustment in developing a community of well adjusted personalities is discussed.

The authors have brought together a very worthwhile collection of

statistical data from the economic point of view, but their most significant contribution, to the reviewer, appears to lie in the emphasis which they place upon the diverse psychological factors which underlie suicides, and the importance of mental hygiene if the problem is to be intelligently handled.

Skidmore College. DOROTHEA E. JOHANNSEN.

MENTAL HYGIENE IN THE COMMUNITY. By Clara Bassett. New York: Macmillan, 1934. Pp. 394. $3.50.

One of the most unusual aspects of the present volume is it almost complete freedom from case studies. To the reviewer this appears as a most exemplary achievemnt in a book on mental hygiene. The result is that the book does not so much resemble a light novel as it does a treatise on a scientific topic. The author's ability to stick to her point strikes the reviewer as an excellent characteristic in her style; she does not wander vaguely off tangentially to touch on remotely related topics, but consistently considers only factors of immediate application to her thesis. Her English is unambiguous and concise. Although a considerable number of statistics is quoted to prove or clarify points under discussion, the book does not lay undue emphasis upon the numerical bases of conclusions and inferences. Those figures which are given are an integral part of the text; practically no tables of data are listed.

Following a logical plan, the author shows the wide variety of ways in which mental hygiene touches upon different aspects of community life. The rôle mental hygiene plays (or should play) in such aspects of society as medicine, law, education (a chapter is given to each of three kinds of education, parental, preschool, and teacher-training), religion, industry, recreation, and social and psychiatric services and agencies is considered in the twelve chapters of the book. No attempt is made to deal with the mental problems of individuals, but the application of mental hygiene principles as they apply to individuals as members of some particular social group is outlined. Necessarily, if one reduces these applications to their basic elements, a great deal of repetition will be found, since the principles underlying the applications are, after all, uniform. Whether this will seem redundant, will depend upon the reader's point of view.

There is no analytical bibliography, but a list of twenty-six bibliographies on different aspects of mental hygiene is to be found at the end of the book.

The author is obviously completely "sold" on the importance of her message, but is not at all annoying to the reader in her enthusiasm. One cannot help feeling that she is very much a missionary, but she is not an offensive one.

At the end of each chapter there is a long list of questions, which bring out in detail the meaning of mental hygiene for those particular aspects of our social life which are under consideration. The questions are headed "Suggestions for the Investigation of Mental Hygiene Developments

in . . . (Nursing, Parental education, *et al.*)." They might very well serve as a guide for students interested in studying in detail these particular topics. But the reviewer would suggest that persons who have positions of authority in any one of these fields might very well use the questions as a kind of professional catechism!

Skidmore College. DOROTHEA E. JOHANNSEN.

BEAUTY AND HUMAN NATURE. By Albert R. Chandler. D. Appleton-Century Co. $3.50.

Aesthetics from the psychologist's point of view has long been in need of a number of different things. It has needed a summary and evaluation of the experimental studies which have been accumulating for the last fifty years. It has needed a systematic and comprehensive presentation of the psychological aspects of art which will make the subject clear and interesting to the undergraduate. It has needed also, an analysis of the aesthetic experience, in terms of the facts and principles of the psychology of today, accurate descriptions and exact definitions of all the processes involved. And, because of the nature of the subject, there was also hope for distinction and dignity in the use of language, broad and sympathetic understanding in the treatment of the material. *Beauty and Human Nature* is outstandingly satisfying in the first two of these requirements and somewhat disappointing in the other two.

A large part of the volume is devoted to reviews and discussions of psychological experimentation in music, poetry and visual art, and much gratitude is due to the author who has gathered together into one volume the wealth of material scattered widely through the journals and monographs from 1876 to 1931, hitherto inaccessible to the classroom student, and often unknown or unavailable even to the more serious scholar. The experiments are described clearly and arranged in sequences which emphasize their relation to each other and expose the general trend of experimentation in each field. In these chapters, the discussion is made as readable, unprejudiced and unpedantic as possible, and likewise in the chapters devoted to the usual topics—Beauty and Experience, Talent, the Artist, Culture and Appreciation, etc.—the treatment is particularly well adapted to the undergraduate student. The aspects, the details, the categories, even the figures of speech are those which would make art seem to him most real, explicit, understandable and interesting.

The long history of experimental work on the pleasantness and the expressiveness of colors and lines is carefully reviewed and the results in every case point to the same conclusions. These factors are immensely complex, related to every conceivable aspect of the environment and the observer, and they elude every attempt to reduce them to a formula which will provide the neat solution to the problem which every amateur has hoped for. Three chapters on music provide an excellent groundwork for the study and understanding of this art form. There is a discussion

of sound and tone, and of the expressiveness and structure of the most common musical forms. The arrangement of the material is, however, a little puzzling, for half the chapter on elements is devoted to expressiveness and half the chapter on expressiveness is devoted to appreciation in general. The student will find many new clues to the beauties of prose and verse in the chapters on literature although one misses Lanz's interesting theories of rhyme and the excellent objective studies of Miss Rickert on style. One of the best chapters in the book is "The Artist and His Work", in which is given a most convincing analysis of the processes involved in writing a poem. It is well supported by objective evidence and contrasted excellently with a similar analysis of the process in a less talented individual. The concept of empathy is particularly well developed, in straight-forward psychological language. The early history of the concept, the controversial material, and those extraordinary examples described in archaic, ecstatic vocabulary—all of which wrought confusion in the minds of the beginning student—are omitted. There are hints of the part played by empathy scattered through the chapters on music, color and form, which serve to remind the student of the usefulness and importance of the process.

In the first two chapters the author defines and discusses the aesthetic experience. It is satisfaction in contemplation, with *satisfaction* defined simply as a state of mind indicated by the willingness to prolong or repeat the experience, and *contemplation* a general term to include perceived, imagined or remembered material. It is different from the practical, bodily satisfactions where the attention is on the bodily state, and from intellectual satisfactions which are abstract and indirect and not "derived from the quality of any single intuition". The aesthetic experience has three characteristic traits: (1) Isolation, because the experience is complete in itself and does not direct the attention to anything outside itself; (2) Unity, for "one test of an esthetic object is that it should be impossible to add to it or subtract from it or to change the relations among its parts without impairing the effect"; and (3) Significance, for it expresses something which is important to us. The three characteristics serve to reinforce each other, but significance is not as important as the other two. It is not clear whether the concept is significant to the individual or significant perhaps in the large, to mankind in general. The importance of this aspect is enlarged, however, in some later paragraphs which present the idea that there must always be something in beauty to command our deference (humility) something to make an immediate and forceful impression on us.

Further illumination on the nature of art comes from the discussion of the differences between decorative, persuasive, expository and pure art, and by classifying all possible forms of art into categories. Classification is difficult if we move in the plane of literary usage for the categories would multiply beyond control, (charm, elegance, delicacy, loveliness, splendor, etc., a "hopeless tangle of synonyms") and a more instructive basis of

classification assumes that the "variety of aesthetic categories is due to the variety of impulses which are fused in the aesthetic experience".

The categories based on the impulses, are as follows: (1) Formal beauty or sensory-perceptual beauty, involving little or no appeal to impulse;[1] (2) Formal beauty enriched by sexual charm; (3) Formal beauty enriched by our protective impulses; (4) Sublimity, involving impulses of self-assertion and fear, and including tragedy which appeals also to our fighting spirit; (5) The comic, which is connected with self-assertion and sometimes with fear, and especially with self-assertion liberated by the collapse of its opponent. But these five categories leave so much of the aesthetic realm unaccounted for that a sixth and last category is set up to include all the remainder. It is called simply "the interesting" and it appeals to our sympathy and curiosity. "To this category nothing human is foreign."

Even the warning of the author that his aim was psychological, not philosophical, and that therefore he will not argue for the "ultimate validity and exactitude of these definitions", does not mitigate the disappointment in this analysis of the aesthetic experience. These "impulses" are not identified with any acceptable psychological processes, and the aesthetic experience is not adequately defined nor distinguished from other psychological experience. The categories are likewise inadequate and justifiable only as a device for organizing the facts and arousing the interest of the amateur.

The first two chapters then, do not give the precise and systematic description of the aesthetic experience which psychologists had been hoping to find. Nor it there the distinction and charm in the literary style, nor the breadth of view and wisdom in the treatment that such a title implies. But the value of the book as a scholarly review and evaluation of an enormous amount of material can hardly be overestimated. And more than that, it presents this material in a particularly clear and readable form. Psychology is fortunate to have such a complete and sophisticated treatment of art, and a textbook which cannot fail to prove successful and interesting to the student.

KATE HEVENER

BLACK ANGELS OF ATHOS. By Michael Choukas. Brattleboro, Vermont: Stephen Daye Press, 1934. Pp. xxiii + 327.

The monasteries of Mount Athos, the Holy Peninsula of Greece, have been treated from the standpoints of history and wealth of libraries, relics and objects of art by a number of authors. Mr. Choukas essays to give the first sociological analysis of this most significant monastic group of the Eastern Church. The author is especially suited for the task as he combines knowledge of the Greek language and people with special training in sociology.

[1] The apparent discrepancy in this absence of impulse is later obviated by pointing out that all forms of beauty properly so called must arouse the impulse of respect or deference, a "need of humility".

Historical background, based upon recognized sources, occupies the first section of the book. The other two sections are devoted respectively to description and interpretation of the social structure, functioning and change which characterizes Athos in the present era. The material for this treatment was secured principally at first hand, the author spending a summer on Athos living in the various monasteries and in company with monastic and lay inhabitants. To his own observations he adds material gathered from current writings and from conversations with persons acquainted with the peninsula.

Historically monasticism on Athos represents a development of more than a thousand years. The historical development is important because it contains the evolution of the three forms of monastic life which are the basis of the present organization: the eremitic or isolated existence, the cenobitic or communistic existence and the idiorrhythmic or individualistic. This consideration shows that large numbers of monks desiring to lead a life apart sought this life on Athos and early developed cenobitic monasteries. In the fifteenth century the monasteries were threatened with economic difficulties and as a result permitted individualistic enterprise, which is the essential characteristic of idiorrhythmic monasteries. At present there are monks who live the eremitical existence, while the monastic groups are divided into eleven cenobitic and nine idiorrhythmic.

In analyzing and describing the monastic community Mr. Choukas treats the persons who become monks and their reasons for abnegating the world, the attention given to religious worship, the formal organization of the monasteries and of the monastic community, and the materialistic phases of the life of the monks. The picture is presented of individuals who leave the world because of failure or frustration, devote themselves to formalistic worship, live under absolute regulation and enjoy little in the way of material comforts.

The interpretation deals with the factors which have led to development and continuation of monasticism, the power of tradition in preserving the institution, and the breakdown of tradition because of the impact of material culture and ideas from without. The decline and approaching disintegration of the community Mr. Choukas attributes internally to inability to preserve the other-worldly ideal in the face of fleshly and material desires and externally to the lack of an aim, which the community had for centuries in promoting religious and cultural ideas of Byzantium and afterward as the supporter of Greek nationalism. Added to this is the growing hostility of the Greeks who, heavily taxed and no longer sympathetic to monasticism, threaten the valuable property and treasures of the monks.

Mr. Choukas has presented a clear picture of the factors leading to the rise of monasticism, of its development into varied forms of existence on Athos, of the social structure and functioning of the community at the present time, and of the factors which seem to be leading inevitably to its decay. The author may be criticized for stating aims which are so broad in sociological implication as hardly to be commensurate with the analysis

of a single community atypical in a number of respects. His description might well give more clearly the distinction in the economic systems of the cenobitic and idiorrhythmic monasteries, for the difference is apparently very significant. The interpretation disgresses to discuss the reality of immortality and the failure of monastic life to offer evidence of this reality. Such a metaphysical question seems to have little place in a sociological analysis, even when the analysis be of a monastic community.

With the exception of a few such points the book may be commended. It contains a striking presentation of differentiation of social structure in a society where a single ideal has been emphasized; an indication of basic forces of human nature which, though suppressed, have not been extinguished and are active in altering the community; and a careful analysis of the impact of external forces upon a community extremely isolated from worldly contact.

Harvard University. JOHN B. KNOX.

TRAINING THE ADOLESCENT. By R. C. McCarthy, S.J. New York: Bruce Publishing Co., 1934. Pp. xx + 298.

Here is another point of view, the Catholic, to add to the great variety of approaches already made to the topic of Adolescence. The author makes no apologies for his terminology and bias; on the contrary he frankly says, "This book is intended as a text for Catholic colleges, and Catholic philosophy is appealed to often in an effort to interpret some of the findings of modern psychology". He acknowledges special debts to Tracy's book on the same subject and defers statistical treatment of our data to such texts as that by Brooks.

The temptation is strong to quote passages from the book to illustrate a bias with which the reviewer is not in sympathy. The unfairness of taking quotations out of their setting for adverse comment, however, leaves little to be done but to point out the religious doctrines with which the book is weighted and to list the content. The chapters group themselves over a wide range: physical and emotional maturation, socialization (along Catholic lines) of the sex instincts, juvenile delinquency regarded as an indication of society's failures, techniques of moral and religious training of the adolescent, physical and mental health, and guidance. Special attention is called to one topic only, that of sex education. The writer reflects the growing liberalism of viewpoint on this subject by stating that "sex education is, to my mind, a positive necessity". The dangers of total absence or overemphasis are indicated and a compromise position taken.

C. N. ALLEN.

GENEALOGY OF SEX. By C. Thesing. New York: Emerson Books, Inc., 1934. Pp. xi + 286. (Trans.)

Thesing has written a much-needed and well-told outline of the evolution of sexuality. The reviewer has tested it with laymen, undergraduates,

and scientists and found the verdict in each case very favorable although for different reasons in each case.

The book is aptly termed a "genealogy" for it is in all truth just that. The author suggests that "Sexuality arose out of the chance union of two organisms of the same species differing in some respect in their qualities . . . gave their offspring increased variability and capacity for adaptation and this proved advantageous in the struggle for existence." There are said to be two lines of sexual development: the separation of the male and the female, active and passive respectively, and the production of hermaphroditic organisms such as paramecium. The author makes a great deal of this second line of development, perhaps more than makes for the clearest continuity for the average reader, interesting as it may be to all students of the subject. The book deals with all forms from protozoa to man: asexual organisms, sexual species in which specialized reproductive cells have been developed, the hermaphrodite and intermediate sex groups, and finally the peak of evolution in the separation of male and female for specialized functions which makes possible the "emancipation of women" in some species. The 73 illustrations of which the 13 full pages of photographs are the best add materially to the book.

The last two chapters do not necessarily belong to the major content. The chapter on "Lures and Stimuli" is fascinating reading but is a by-path. The final chapter borrows heavily from Malinowski and the German anthropologists in treating of the love-life of primitive peoples, especially of the Trobrianders. It may be argued that brief summaries of these two complex subjects are exceptionally valuable to the casual reader; they scarcely do justice to them for the student. It seems to the reviewer that the chief value of this book lies in its organization and very readable presentation of the vast amount of anthropological and zoölogical research that is piling up faster than it can be assimilated by any but specialists. Many questions are answered and any careful book that removes some of man's ignorance regarding the important sexual functions is indeed welcome. The general tone is high and the wide audience to which this book caters will profit by a careful reading.

C. N. Allen.

The Riddle of the Sphynx, or Human Origins. By G. Róheim. London: Hogarth Press, 1934. Pp. 302. Translated by R. Money-Kyrle. Internatl. Library Psychoan. No. 25.

This is an attempt by a well-equipped anthropologist-psychoanalyst to translate his first-hand observations of the Central Australian savages into agreement with the Freudian theory of society. A latent content is sought in the totemism which is a male refinement of the older demon religion, on the supposition that the totemism is a highly symbolic expression of basic unconscious wishes. The argument is difficult to follow clearly both because of the argument itself and because of the constant mixing of native, technical, and ordinary vocabularies. The book is not "popular" but will be

welcomed by the student who has found stimulation in Freud's *Totem and Taboo* and the works of Malinowski. Because of the complexity of the thesis and data it is suggested that pages 280–285 be read before the book as such is attempted to gain a more general summary statement.

Totemism is defined as a form of ancestral culture which derived out of a belief in demons. A totem ("knanindja") is an "origin" which suggests at once the entire mythology of conception. The argument starts with the Oedipus situation as accepted by hypothesis, and posits a strong tabu against admitting coitus of the parents which may have stirred strong emotions of jealous love and hate in the alleged observer. The Oedipus wish is strongly repressed during the long period of infancy, but the whole "primal scene" is symbolically expressed through the totem ritual. The two parents are represented as demons according to their cult, and their sexual behavior appears in the totemism as some ordinary act sometimes closely related and sometimes not. The totemic ritual is thus the manifest content of the Oedipus complex. The totem animal symbolizes the father. There is said to be a close parallel between the Oedipus wish (to replace the father and possess the mother) and the two main tabus: *not* to kill the totem animal and *not* to engage in coitus with women of the same totem. It is alleged that the intricate process of defense mechanism elaboration which is totemism is the same as that of Super-ego elaboration in the individual. The basis is the "primal scene", but each tribe will establish a different cult as the symbolism invented to disguise the Oedipus wish has been chosen differently. Upon this basis is said to rest all of our organized society from primitive tribe to complex civilization.

No criticism of this complex argument is here undertaken. It will depend upon the acceptance or rejection of the major premise how the reader evaluates this contribution to social anthropology.

C. N. Allen.